

GEOFFREY BURNSTOCK, PhD, DSc, FAA, FRCS (Hon), FRCP (Hon), FMedSci, FRS

PUBLICATIONS

1. Burnstock, G. (1957). A 'window' technique for observing fish viscera *in vivo*. *Nature* **180**, 1491-1492.
2. Burnstock, G. (1958). Reversible inactivation of nervous activity in a fish gut. *J. Physiol.* **141**, 35-45.
3. Burnstock, G. & Straub, R.W. (1958). A method for studying the effects of ions and drugs on the resting and action potentials in smooth muscle with external electrodes. *J. Physiol.* **140**, 156-167.
4. Bülbring, E., Burnstock, G. & Holman, M.E. (1958). Excitation and conduction in the smooth muscle of the isolated taenia coli of the guinea-pig. *J. Physiol.* **142**, 420-437.
5. Burnstock, G. (1958). The effects of acetylcholine on membrane potential, spike frequency, conduction velocity and excitability in the taenia coli of the guinea-pig. *J. Physiol.* **143**, 165-182.
6. Burnstock, G. (1958). The action of adrenaline on excitability and membrane potential in the taenia coli of the guinea-pig and the effect of DNP on this action and on the action of acetylcholine. *J. Physiol.* **143**, 183-194.
7. Burnstock, G. (1958). The effect of drugs on spontaneous motility and on response to stimulation of the extrinsic nerves of the gut of a teleostean fish. *Br. J. Pharmacol.* **13**, 216-226.
8. Burnstock, G. (1959). The morphology of the gut of the brown trout (*Salmo trutta*). *Q. J. Microsc. Sci.* **100**, 183-198.
9. Burnstock, G. (1959). The innervation of the gut of the brown trout (*Salmo trutta*). *Q. J. Microsc. Sci.* **100**, 199-219.
10. Bülbring, E. & Burnstock, G. (1960). Membrane potential changes associated with tachyphylaxis and potentiation of the response to stimulating drugs in smooth muscle. *Br. J. Pharmacol.* **15**, 611-624.
11. Burnstock, G. & Prosser, C.L. (1960). Delayed repolarization in smooth muscles. *Proc. Soc. Exp. Biol. Med.* **103**, 269-270.
12. Burnstock, G. (1960). Membrane potential changes associated with stimulation of smooth muscle by adrenaline. *Nature* **186**, 727-728.
13. Burnstock, G. & Prosser, C.L. (1960). Responses of smooth muscles to quick stretch; relation of stretch to conduction. *Am. J. Physiol.* **198**, 921-925.
14. Prosser, C.L., Burnstock, G. & Kahn, J. (1960). Conduction in smooth muscle; comparative structural properties. *Am. J. Physiol.* **199**, 545-552.

15. Burnstock, G. & Prosser, C.L. (1960). Conduction in smooth muscle: comparative electrical properties. *Am. J. Physiol.* **199**, 553-559.
16. Burnstock, G. & Holman, M.E. (1960). Autonomic nerve-smooth muscle transmission. *Nature* **187**, 951-952.
17. Burnstock, G. & Holman, M.E. (1961). The transmission of excitation from autonomic nerve to smooth muscle. *J. Physiol.* **155**, 115-133.
18. Burnstock, G. & Holman, M.E. (1962). Spontaneous potentials at sympathetic nerve endings in smooth muscle. *J. Physiol.* **160**, 446-460.
19. Burnstock, G. & Holman, M.E. (1962). Effect of denervation and of reserpine treatment on transmission at sympathetic nerve endings. *J. Physiol.* **160**, 461-469.
20. Bennett, M.R., Burnstock, G., Holman, M.E. & Walker, J.W. (1962). The effect of Ca²⁺ on plateau-type action potentials in smooth muscle. *J. Physiol.* **161**, 47P-48P.
21. Burnstock, G., Dewhurst, D.J. & Simon, S.E. (1963). Sodium exchange in smooth muscle. *J. Physiol.* **167**, 210-228.
- *22. Burnstock, G. & Holman, M.E. (1963). Smooth muscle: autonomic nerve transmission. *Annu. Rev. Physiol.* **25**, 61-90.
23. Burnstock, G., O'Shea, J. & Wood, M. (1963). Comparative physiology of the vertebrate autonomic nervous system. I. Innervation of the urinary bladder of the toad (*Bufo marinus*). *J. Exp. Biol.* **40**, 403-419.
24. Burnstock, G. & Campbell, G. (1963). Comparative physiology of the vertebrate autonomic nervous system. II. Innervation of the urinary bladder of the ringtail possum (*Pseudocheirus peregrinus*). *J. Exp. Biol.* **40**, 421-436.
25. Boyd, H., Burnstock, G., Campbell, G., Jowett, A., O'Shea, J. & Wood, M. (1963). The cholinergic blocking action of adrenergic blocking agents in pharmacological analysis of autonomic innervation. *Br. J. Pharmacol.* **20**, 418-435.
- *26. Burnstock, G., Holman, M.E. & Prosser, C.L. (1963). Electrophysiology of smooth muscle. *Physiol. Rev.* **43**, 482-527.
27. Merrillees, N.C.R., Burnstock, G. & Holman, M.E. (1963). Correlation of fine structure and physiology of the innervation of smooth muscle in the guinea pig vas deferens. *J. Cell Biol.* **19**, 529-550.
28. Bennett, M., Burnstock, G. & Holman, M.E. (1963). The effect of potassium and chloride ions on the inhibitory potential recorded in the guinea-pig taenia coli. *J. Physiol.* **169**, 33P-34P.
29. Burnstock, G., Campbell, G., Bennett, M. & Holman, M.E. (1963). The effects of drugs on the transmission of inhibition from autonomic nerves to the smooth muscle of the guinea pig taenia coli. *Biochem. Pharmacol.* **12 (Suppl.)**, 134-135.
30. Burnstock, G., Campbell, G., Bennett, M. & Holman, M.E. (1963). Inhibition of the smooth muscle of the taenia coli. *Nature* **200**, 581-582.

31. Burnstock, G., Holman, M.E. & Kuriyama, H. (1964). Facilitation of transmission from autonomic nerve to smooth muscle of guinea-pig vas deferens. *J. Physiol.* **172**, 31-49.
32. Campbell, G., Burnstock, G. & Wood, M. (1964). A method for distinguishing between adrenergic and cholinergic excitatory innervation of smooth muscle. *Q. J. Exp. Physiol.* **49**, 268-276.
- *33. Burnstock, G. & Merrillees, N.C.R. (1964). Structural and experimental studies on autonomic nerve endings in smooth muscle. In: *Pharmacology of Smooth Muscle. Proceedings of the 2nd International Pharmacology Meeting, Prague*. Pergamon Press, Oxford. pp. 1-17.
34. Boyd, H., Burnstock, G. & Rogers, D. (1964). Innervation of the large intestine of the toad (*Bufo marinus*). *Br. J. Pharmacol. Chemother.* **23**, 151-163.
35. Burnstock, G., Campbell, G., Bennett, M. & Holman, M.E. (1964). Innervation of the guinea-pig taenia coli: are there intrinsic inhibitory nerves which are distinct from sympathetic nerves? *Int. J. Neuropharmacol.* **3**, 163-166.
36. Burnstock, G. & Holman, M.E. (1964). An electrophysiological investigation of the actions of some autonomic blocking drugs on transmission in the guinea-pig vas deferens. *Br. J. Pharmacol. Chemother.* **23**, 600-612.
37. Bell, C. & Burnstock, G. (1965). Cholinesterases in the bladder of the toad (*Bufo marinus*). *Biochem. Pharmacol.* **14**, 79-89.
38. Burnstock, G. & Bennett, M. (1965). Nervous control of single smooth muscle cells in the intestine. *J. Aust. Soc. Med. Res.* **1**, 167-168.
39. Burnstock, G., Campbell, G. & Rand, M.J. (1966). The inhibitory innervation of the taenia of the guinea-pig caecum. *J. Physiol.* **182**, 504-526.
40. Bennett, M., Burnstock, G. & Holman, M.E. (1966). Transmission from perivascular inhibitory nerves to the smooth muscle of the guinea-pig taenia coli. *J. Physiol.* **182**, 527-540.
41. Bennett, M., Burnstock, G. & Holman, M.E. (1966). Transmission from intramural inhibitory nerves to the smooth muscle of the guinea-pig taenia coli. *J. Physiol.* **182**, 541-558.
42. Rogers, D. & Burnstock, G. (1966). The interstitial cell and its place in the concept of the autonomic ground plexus. *J. Comp. Neurol.* **126**, 255-284.
43. Rogers, D. & Burnstock, G. (1966). Multiaxonal autonomic junctions in intestinal smooth muscle of the toad (*Bufo marinus*). *J. Comp. Neurol.* **126**, 625-652.
44. Burnstock, G. & Holman, M.E. (1966). Junction potentials at adrenergic synapses. *Pharmacol. Rev.* **18**, 481-493.
45. Bennett, M. & Burnstock, G. (1966). Application of the sucrose-gap method to determine the ionic basis of the membrane potential of smooth muscle. *J. Physiol.* **183**, 637-648.
- *46. Burnstock, G. & Holman, M.E. (1966). Effect of drugs on smooth muscle. *Annu. Rev. Pharmacol.* **6**, 129-156.

47. McLean, J.R. & Burnstock, G. (1966). Histochemical localization of catecholamines in the urinary bladder of the toad (*Bufo marinus*). *J. Histochem. Cytochem.* **14**, 538-548.
48. McLean, J.R. & Burnstock, G. (1967). Innervation of the urinary bladder of the sleepy lizard (*Trachysaurus rugosus*). I. Fluorescent histochemical localization of catecholamines. *Comp. Biochem. Physiol.* **20**, 667-673.
49. Burnstock, G. & Wood, M.E. (1967). Innervation of the urinary bladder of the sleepy lizard (*Trachysaurus rugosus*). II. Physiology and pharmacology. *Comp. Biochem. Physiol.* **20**, 675-690.
50. McLean, J.R., Bell, C. & Burnstock, G. (1967). Histochemical and pharmacological studies of the innervation of the urinary bladder of the frog (*Rana temporaria*). *Comp. Biochem. Physiol.* **21**, 383-392.
- *51. Burnstock, G. & Robinson, P.M. (1967). Localization of catecholamines and acetylcholinesterase in autonomic nerves. In: *American Heart Association Monograph (No 17)*. *Circ. Res.* **21 (Suppl. 3)**, 43-55.
52. Wood, M.J. & Burnstock, G. (1967). Innervation of the lungs of the toad (*Bufo marinus*). Physiology and pharmacology. *Comp. Biochem. Physiol.* **22**, 755-766.
53. McLean, J.R. & Burnstock, G. (1967). Innervation of the lungs of the toad (*Bufo marinus*). II. Fluorescent histochemistry of catecholamines. *Comp. Biochem. Physiol.* **22**, 767-773.
54. McLean, J.R. & Burnstock, G. (1967). Innervation of the lungs of the sleepy lizard (*Trachysaurus rugosus*). I. Fluorescent histochemistry of catecholamines. *Comp. Biochem. Physiol.* **22**, 809-813.
55. Burnstock, G. & Wood, M.J. (1967). Innervation of the lungs of the sleepy lizard (*Trachysaurus rugosus*). II. Physiology and pharmacology. *Comp. Biochem. Physiol.* **22**, 815-831.
56. Yamauchi, A. & Burnstock, G. (1967). Nerve-myoeplithelium and nerve-glandular epithelium contacts in the lacrimal gland of the sheep. *J. Cell Biol.* **34**, 917-919.
57. Burnstock, G., Greenberg, M.J., Kirby, S. & Willis, A.G. (1967). An electrophysiological and pharmacological study of visceral smooth muscle and its innervation in a mollusc, *Poneroplax albida*. *Comp. Biochem. Physiol.* **23**, 407-429.
- *58. Bennett, M.R. & Burnstock, G. (1968). Electrophysiology of the innervation of intestinal smooth muscle. In: *Handbook of Physiology, Section 6, Alimentary Canal. IV. Motility*. Ed. C.F. Code, American Physiological Society, Washington. pp. 1706-1732.
- *59. Campbell, G. & Burnstock, G. (1968). Comparative physiology of gastrointestinal motility. In: *Handbook of Physiology, Section 6, Alimentary Canal. IV. Motility*. Ed. C.F. Code, American Physiological Society, Washington. pp. 2213-2266.
60. Yamauchi, A. & Burnstock, G. (1968). An electron microscopic study on the innervation of the trout heart. *J. Comp. Neurol.* **132**, 567-588.

61. Read, J.B. & Burnstock, G. (1968). Comparative histochemical studies of adrenergic nerves in the enteric plexuses of vertebrate large intestine. *Comp. Biochem. Physiol.* **27**, 505-517.
62. Read, J.B. & Burnstock, G. (1968). Fluorescent histochemical studies on the mucosa of the vertebrate gastrointestinal tract. *Histochemie* **16**, 324-332.
63. Burnstock, G. & Kirby, S. (1968). Absence of inhibitory effects of catecholamines on lower vertebrate arterial strip preparations. *J. Pharm. Pharmacol.* **20**, 404-406.
64. Yamauchi, A. & Burnstock, G. (1968). On the fine structure of the trout heart. *J. Anat.* **103**, 207-208.
65. Nakanishi, C., McLean, J., Wood, C. & Burnstock, G. (1968). The role of sympathetic nerves in control of the nonpregnant and pregnant human uterus. *J. Reprod. Med.* **2**, 20-33.
66. Kirby, S. & Burnstock, G. (1969). Comparative pharmacological studies of isolated spiral strips of large arteries from lower vertebrates. *Comp. Biochem. Physiol.* **28**, 307-319.
67. Yamauchi, A. & Burnstock, G. (1969). Post-natal development of smooth muscle cells in the mouse vas deferens. A fine structural study. *J. Anat.* **104**, 1-15.
68. Yamauchi, A. & Burnstock, G. (1969). Post-natal development of the innervation of the mouse vas deferens. A fine structural study. *J. Anat.* **104**, 17-32.
69. Kirby, S. & Burnstock, G. (1969). Pharmacological studies of the cardiovascular system in the anaesthetized sleepy lizard (*Tiliqua rugosa*) and toad (*Bufo marinus*). *Comp. Biochem. Physiol.* **28**, 321-331.
70. Read, J.B. & Burnstock, G. (1969). Adrenergic innervation of the gut musculature in vertebrates. *Histochemie* **17**, 263-272.
71. Gannon, B.J. & Burnstock, G. (1969). Excitatory adrenergic innervation of the fish heart. *Comp. Biochem. Physiol.* **29**, 765-773.
72. Gannon, B.J., Burnstock, G., Noblett, H.R. & Campbell, P.E. (1969). Histochemical diagnosis of Hirschsprung's disease. *Lancet* **293**, 894-895.
73. Furness, J.B. & Burnstock, G. (1969). A comparative study of spike potentials in response to nerve stimulation in the vas deferens of the mouse, rat and guinea-pig. *Comp. Biochem. Physiol.* **31**, 337-345.
74. Gannon, B.J., Noblett, H.R. & Burnstock, G. (1969). Adrenergic innervation of bowel in Hirschsprung's disease. *Br. Med. J.* **3**, 338-340.
- *75. Burnstock, G. (1969). Evolution of the autonomic innervation of visceral and cardiovascular systems in vertebrates. *Pharmacol. Rev.* **21**, 247-324.
76. Read, J.B. & Burnstock, G. (1969). A method for the localization of adrenergic nerves during early development. *Histochemie* **20**, 197-200.

- *77. Burnstock, G. (1970). Structure of smooth muscle and its innervation. In: *Smooth muscle*. Eds. E. Bülbring, A. Brading, A. Jones & T. Tomita, Edward Arnold, London. pp. 1-69.
78. Furness, J.B., McLean, J.R. & Burnstock, G. (1970). Distribution of adrenergic nerves and changes in neuromuscular transmission in the mouse vas deferens during postnatal development. *Dev. Biol.* **21**, 491-505.
79. Uehara, Y. & Burnstock, G. (1970). Demonstration of "gap junctions" between smooth muscle cells. *J. Cell Biol.* **44**, 215-217.
80. Iwayama, T., Furness, J.B. & Burnstock, G. (1970). Dual adrenergic and cholinergic innervation of the cerebral arteries of the rat. An ultrastructural study. *Circ. Res.* **26**, 635-646.
81. Bennett, T., Burnstock, G., Cobb, J.L.S. & Malmfors, T. (1970). An ultrastructural and histochemical study of the short-term effects of 6-hydroxydopamine on adrenergic nerves in the domestic fowl. *Br. J. Pharmacol.* **38**, 802-809.
82. Furness, J.B., Campbell, G.R., Gillard, S.M., Malmfors, T., Cobb, J.L.S. & Burnstock, G. (1970). Cellular studies of sympathetic denervation produced by 6-hydroxydopamine in the vas deferens. *J. Pharmacol. Exp. Ther.* **174**, 111-122.
83. Read, J.B. & Burnstock, G. (1970). Development of the adrenergic innervation and chromaffin cells in the human fetal gut. *Dev. Biol.* **22**, 513-534.
- *84. Burnstock, G., Gannon, B. & Iwayama, T. (1970). Sympathetic innervation of vascular smooth muscle in normal and hypertensive animals. *Circ. Res.* **27 (Suppl. 2)**, 5-24.
85. Burnstock, G., Campbell, G., Satchell, D. & Smythe, A. (1970). Evidence that adenosine triphosphate or a related nucleotide is the transmitter substance released by non-adrenergic inhibitory nerves in the gut. *Br. J. Pharmacol.* **40**, 668-688.
- *86. Bell, C. & Burnstock, G. (1971). Cholinergic vasomotor neuroeffector junctions. In: *Proceedings of a Symposium on the Physiology and Pharmacology of Vascular Neuroeffector Systems, Interlaken, 1969*. Eds. J.A. Bevan, R.F. Furchgott, R.A. Maxwell & A.P. Somlyo, Karger, Basel. pp. 37-46.
87. Robinson, P.M., McLean, J.R. & Burnstock, G. (1971). Ultrastructural identification of non-adrenergic inhibitory nerve fibers. *J. Pharmacol. Exp. Ther.* **179**, 149-160.
88. Burnstock, G., Doyle, A.E., Gannon, B.J., Gerkens, J.F., Iwayama, T. & Mashford, M.L. (1971). Prolonged hypotension and ultrastructural changes in sympathetic neurones following guanacine treatment. *Eur. J. Pharmacol.* **13**, 175-187.
89. Uehara, Y. & Burnstock, G. (1971). Inclusion bodies in fibroblast-like cells in the mucosa of the guinea pig ureter. *J. Ultrastruct. Res.* **34**, 175-180.
- *90. Burnstock, G. & Iwayama, T. (1971). Fine structural identification of autonomic nerves and their relation to smooth muscle. In: *Progress in Brain Research, 34, Histochemistry of Nervous Transmission*. Ed. O. Eränkő, Elsevier, Amsterdam. pp. 389-404.
91. Burnstock, G. (1971). Neural nomenclature. *Nature* **229**, 282-283.

92. Malmfors, T., Furness, J.B., Campbell, G.R. & Burnstock, G. (1971). Re-innervation of smooth muscle of the vas deferens transplanted into the anterior chamber of the eye. *J. Neurobiol.* **2**, 193-207.
93. Campbell, G.R., Uehara, Y., Mark, G. & Burnstock, G. (1971). Fine structure of smooth muscle cells grown in tissue culture. *J. Cell Biol.* **49**, 21-34.
94. Satchell, D.G. & Burnstock, G. (1971). Quantitative studies of the release of purine compounds following stimulation of non-adrenergic inhibitory nerves in the stomach. *Biochem. Pharmacol.* **20**, 1694-1697.
95. Uehara, Y., Campbell, G.R. & Burnstock, G. (1971). Cytoplasmic filaments in developing and adult vertebrate smooth muscle. *J. Cell Biol.* **50**, 484-497.
96. Su, C., Bevan, J.A. & Burnstock, G. (1971). [³H]Adenosine triphosphate: release during stimulation of enteric nerves. *Science* **173**, 337-339.
97. Campbell, G., Uehara, Y., Malmfors, T. & Burnstock, G. (1971). Degeneration and regeneration of smooth muscle transplants in the anterior eye chamber. An ultrastructural study. *Z. Zellforsch.* **117**, 155-175.
98. Burnstock, G., McLean, J.R. & Wright, M. (1971). Noradrenaline uptake by non-innervated smooth muscle. *Br. J. Pharmacol.* **43**, 180-189.
99. Gannon, B.J., Iwayama, T., Burnstock, G., Gerkens, J. & Mashford, M.L. (1971). Prolonged effects of chronic guanethidine treatment on the sympathetic innervation of the genitalia of male rats. *Med. J. Aust.* **2**, 207-208.
100. Burnstock, G., Gannon, B.J., Malmfors, T. & Rogers, D.C. (1971). Changes in the physiology and fine structure of the taenia of the guinea-pig caecum following transplantation into the anterior eye chamber. *J. Physiol. (Lond.)* **219**, 139-154.
101. Burnstock, G., Evans, B., Gannon, B.J., Heath, J.W. & James, V. (1971). A new method of destroying adrenergic nerves in adult animals using guanethidine. *Br. J. Pharmacol.* **43**, 295-301.
102. McLean, J.R. & Burnstock, G. (1972). Axoplasmic flow of adrenaline and monoamine oxidase in amphibian sympathetic nerves. *Z. Zellforsch.* **124**, 44-56.
- *103. Burnstock, G. (1972). Purinergic nerves. *Pharmacol. Rev.* **24**, 509-581.
104. Burnstock, G., Dumsday, B. & Smythe, A. (1972). Atropine resistant excitation of the urinary bladder: the possibility of transmission via nerves releasing a purine nucleotide. *Br. J. Pharmacol.* **44**, 451-461.
105. Heath, J.W., Evans, B.K., Gannon, B.J., Burnstock, G. & James, V.B. (1972). Degeneration of adrenergic neurons following guanethidine treatment: an ultrastructural study. *Virchows Arch. Abt. B Zellpath.* **11**, 182-197.
106. Eränkö, O., Eränkö, L., Hill, C.E. & Burnstock, G. (1972). Hydrocortisone-induced increase in the number of small intensely fluorescent cells and their histochemically demonstrable catecholamine content in cultures of sympathetic ganglia of the newborn rat. *Histochem. J.* **4**, 49-58.

107. Chamley, J.H., Mark, G.E., Campbell, G.R. & Burnstock, G. (1972). Sympathetic ganglia in culture. I. Neurons. *Z. Zellforsch.* **135**, 287-314.
108. Chamley, J.H., Mark, G.E. & Burnstock, G. (1972). Sympathetic ganglia in culture. II. Accessory cells. *Z. Zellforsch.* **135**, 315-327.
109. Uehara, Y. & Burnstock, G. (1972). Postsynaptic specialization of smooth muscle at close neuromuscular junctions in the guinea pig sphincter pupillae. *J. Cell Biol.* **53**, 849-853.
110. Satchell, D.G., Lynch, A., Bourke, P.M. & Burnstock, G. (1972). Potentiation of the effects of exogenously applied ATP and purinergic nerve stimulation on the guinea-pig taenia coli by dipyridamole and hexobendine. *Eur. J. Pharmacol.* **19**, 343-350.
111. Burnstock, G., Satchell, D.G. & Smythe, A. (1972). A comparison of the excitatory and inhibitory effects of non-adrenergic, non-cholinergic nerve stimulation and exogenously applied ATP on a variety of smooth muscle preparations from different vertebrate species. *Br. J. Pharmacol.* **46**, 234-242.
112. Eränkö, L., Hill, C., Eränkö, O. & Burnstock, G. (1972). Lack of toxic effect of guanethidine on nerve cells and small intensely fluorescent cells in cultures of sympathetic ganglia of newborn rats. *Brain Res.* **43**, 501-513.
113. Burnstock, G., McCulloch, M.W., Story, D.F. & Wright, M.E. (1972). Factors affecting the extraneuronal inactivation of noradrenaline in cardiac and smooth muscle. *Br. J. Pharmacol.* **46**, 243-253.
114. Evans, B., Gannon, B.J., Heath, J.W. & Burnstock, G. (1972). Long-lasting damage to the internal male genital organs and their adrenergic innervation in rats following chronic treatment with the antihypertensive drug guanethidine. *Fertil. Steril.* **23**, 657-667.
- *115. Burnstock, G. (1972). Ultrastructural identification of purinergic nerves. In: *Histochemistry and Cytochemistry*. Eds. T. Takeuchi, K. Ogawa & S. Fujita, Nakanishi, Kyoto. pp. 53-54.
- *116. Burnstock, G. (1972). *How Cells Work. (Monograph for National Science Curriculum)*. Jacaranda Press, Brisbane/London, pp. 1-76.
117. Chamley, J.H., Goller, I. & Burnstock, G. (1973). Selective growth of sympathetic nerve fibers to explants of normally densely innervated autonomic effector organs in tissue culture. *Dev. Biol.* **31**, 362-379.
118. Iwayama, T., Fleming, W.W. & Burnstock, G. (1973). Ultrastructure of mitochondria in atrial muscle associated with depression and supersensitivity produced by reserpine. *J. Pharmacol. Exp. Ther.* **184**, 95-105.
- *119. Burnstock, G. & Costa, M. (1973). Inhibitory innervation of the gut. *Gastroenterology* **64**, 141-144.
120. Yohro, T. & Burnstock, G. (1973). Filament bundles and contractility of endothelial cells in coronary arteries. *Z. Zellforsch.* **138**, 85-95.
121. Hill, C.E., Mark, G.E., Eränkö, O., Eränkö, L. & Burnstock, G. (1973). Use of tissue culture to examine the actions of guanethidine and 6-hydroxydopamine. *Eur. J. Pharmacol.* **23**, 162-174.

122. Evans, B., Iwayama, T. & Burnstock, G. (1973). Long-lasting supersensitivity of the rat vas deferens to norepinephrine after chronic guanethidine administration. *J. Pharmacol. Exp. Ther.* **185**, 60-69.
123. Sneddon, J.D., Smythe, A., Satchell, D. & Burnstock, G. (1973). An investigation of the identity of the transmitter substance released by non-adrenergic, non-cholinergic excitatory nerves supplying the small intestine of some lower vertebrates. *Comp. Gen. Pharmacol.* **4**, 53-60.
124. Mark, G.E., Chamley, J.H. & Burnstock, G. (1973). Interactions between autonomic nerves and smooth and cardiac muscle cells in tissue culture. *Dev. Biol.* **32**, 194-200.
- *125. Campbell, G. & Burnstock, G. (1973). Pharmacology of cholinergic systems in lower vertebrates. In: *International Encyclopaedia of Pharmacology and Therapeutics, Section 85, Comparative Pharmacology. Vol. 1.* Ed. M.J. Michelson, Pergamon Press, Oxford. pp. 43-79.
126. Chamley, J.H., Campbell, G.R. & Burnstock, G. (1973). An analysis of the interactions between sympathetic nerve fibers and smooth muscle cells in tissue culture. *Dev. Biol.* **33**, 344-361.
127. Purves, R.D., Mark, G.E. & Burnstock, G. (1973). The electrical activity of single isolated smooth muscle cells. *Pflügers Arch.* **341**, 325-330.
128. Satchell, D., Burnstock, G. & Dann, P. (1973). Antagonism of the effects of purinergic nerve stimulation and exogenously applied ATP on the guinea-pig taenia coli by 2-substituted imidazolines and related compounds. *Eur. J. Pharmacol.* **23**, 264-269.
129. Yohro, T. & Burnstock, G. (1973). Fine structure of "intimal cushions" at branching sites in coronary arteries of vertebrates. A scanning and transmission electron microscopic study. *Z. Anat. EntwGesch.* **140**, 187-202.
- *130. Burnstock, G. (1973). The autonomic neuroeffector system. *Proc. Aust. Physiol. Pharmacol. Soc.* **4**, 6-22.
131. Armstrong, S., Burnstock, G., Evans, B. & Singer, G. (1973). The effects of intrahypothalamic injections of guanethidine on catecholamine fluorescence, food intake and temperature regulation in the rat. *Pharmacol. Biochem. Behav.* **1**, 307-312.
132. Heath, J.W., Evans, B.K. & Burnstock, G. (1973). Axon retraction following guanethidine treatment. Studies of sympathetic neurons in vivo. *Z. Zellforsch.* **146**, 439-451.
133. Campbell, G.R., Chamley, J.H. & Burnstock, G. (1974). Development of smooth muscle cells in tissue culture. *J. Anat.* **117**, 295-312.
134. Campbell, G.R., Uehara, Y. & Burnstock, G. (1974). Lanthanum nitrate in a smooth muscle membrane system. *Z. Zellforsch.* **147**, 157-161.

135. Hill, C.E., Chamley, J.H. & Burnstock, G. (1974). Cell surfaces and fibre relationships in sympathetic ganglion cultures: a scanning electron-microscopic study. *J. Cell Sci.* **14**, 657-669.
- *136. Burnstock, G. (1974). Some applications of fluorescence histochemistry to clinical problems in autonomic physiology and pharmacology. In: *Amine Fluorescence Histochemistry*. Eds. M. Fujiwara & C. Tanaka, Igaku-Shoin Medical Publications, Tokyo. pp.125-128.
137. Burnstock, G. (1974). Degeneration and oriented growth of autonomic nerves in relation to smooth muscle in joint tissue cultures and anterior eye chamber transplants. In: *Dynamics of Degeneration and Growth in Neurons*. Eds. K. Fuxe, L. Olson & Y. Zotterman, Pergamon Press, Oxford. pp. 509-519.
138. Heath, J.W., Hill, C.E. & Burnstock, G. (1974). Axon retraction following guanethidine treatment: studies of sympathetic neurons in tissue culture. *J. Neurocytol.* **3**, 263-276.
139. Purves, R.D., Hill, C.E., Chamley, J.H., Mark, G.E., Fry, D.M. & Burnstock, G. (1974). Functional autonomic neuromuscular junctions in tissue culture. *Pflügers Arch.* **350**, 1-7.
140. Uehara, Y., Campbell, G.R. & Burnstock, G. (1974). Fine structure of earthworm blood vessels with special reference to the "myoendothelial" cells and their innervation. In: *Electronmicroscopy 1974. Proc. 8th Int. Congr. Electronmicrosc. Canberra Vol. II*. Eds. J.V. Sanders & D.J. Goodchild, Australian Academy of Science, Canberra. pp. 392-393.
141. Fry, D.M. & Burnstock, G. (1974). Ultrastructure and physiology of the innervation of smooth muscle in tissue culture. In: *Electronmicroscopy 1974. Proc. 8th Congr. Electronmicrosc. Canberra Vol. II*. Eds. J.V. Sanders & D.J. Goodchild, Australian Academy of Science, Canberra. pp. 396-397.
142. Heath, J.W. & Burnstock, G. (1974). Ultrastructural changes in axon-sheath relationships in myelinated nerves after guanethidine-induced sympathectomy. In: *Electronmicroscopy 1974. Proc. 8th Int. Congr. Electronmicrosc. Vol. II*. Eds. J.V. Sanders & D.J. Goodchild, Australian Academy of Science, Canberra. pp. 298-299.
143. Campbell, G.R., Chamley, J.H. & Burnstock, G. (1974). Development of smooth muscle *in vitro*. In: *Electronmicroscopy 1974. Proc. 8th Int. Congr. Electronmicrosc. Canberra Vol. II*. Eds. J.V. Sanders & D.J. Goodchild, Australian Academy of Science, Canberra. pp. 394-395.
144. Chamley, J.H., Campbell, G.R. & Burnstock, G. (1974). Dedifferentiation, redifferentiation and bundle formation of smooth muscle cells in tissue culture: the influence of cell number and nerve fibres. *J. Embryol. Exp. Cell Morphol.* **32**, 297-323.
- *145. Burnstock, G. & Bell, C. (1974). Peripheral autonomic transmission. In: *The Peripheral Nervous System*. Ed. J.I. Hubbard, Plenum Press, New York. pp. 277-327.
146. Paddle, B.M. & Burnstock, G. (1974). Release of ATP from perfused heart during coronary vasodilatation. *Blood Vessels* **11**, 110-119.

- *147. Burnstock, G. (1975). Ultrastructure of autonomic nerves and neuroeffector junctions; analysis and drug action. In: *Methods in Pharmacology, Vol. 3. Smooth Muscle*. Eds. E.E. Daniel & D.M. Paton, Plenum Press, New York. pp. 113-137.
- *148. Burnstock, G. (1975). Purinergic transmission. In: *Handbook of Psychopharmacology, Vol. 5*. Eds. L.I. Iversen, S.D. Iversen & S.H. Snyder, Plenum Press, New York. pp. 131-194.
149. Satchell, D.G. & Burnstock, G. (1975). Comparison of the inhibitory effects on the guinea-pig taenia coli of adenine nucleotides and adenosine in the presence and absence of dipyridamole. *Eur. J. Pharmacol.* **32**, 324-328.
- *150. Burnstock, G. & Costa, M. (1975). *Adrenergic Neurones: their Organisation, Function and Development in the Peripheral Nervous System*. Chapman and Hall, London, pp. 1-225.
151. Evans, B.K., Armstrong, S., Singer, G., Cook, R.D. & Burnstock, G. (1975). Intracranial injection of drugs: comparison of diffusion of 6-OHDA and guanethidine. *Pharmacol. Biochem. Behav.* **3**, 205-217.
152. Gröschel-Stewart, U., Chamley, J.H., McConnell, J.D. & Burnstock, G. (1975). Comparison of the reaction of cultured smooth and cardiac muscle cells and fibroblasts to specific antibodies to myosin. *Histochemistry* **43**, 215-224.
153. Burnstock, G., Cocks, T., Paddle, B. & Staszewska-Barczak, J. (1975). Evidence that prostaglandin is responsible for the 'rebound contraction' following stimulation of non-adrenergic, non-cholinergic ('purinergic') inhibitory nerves. *Eur. J. Pharmacol.* **31**, 360-362.
154. Evans, B.K., Singer, G., Armstrong, S., Saunders, P.E. & Burnstock, G. (1975). Effects of chronic intracranial injection of low and high concentrations of guanethidine in the rat. *Pharmacol. Biochem. Behav.* **3**, 219-228.
- *155. Burnstock, G. (1975). Innervation of vascular smooth muscle: histochemistry and electron microscopy. In: *Physiological and Pharmacological Control of Blood Pressure. Clin. Exp. Pharmacol. Physiol. Suppl.* **2**, 7-20.
- *156. Singer, G., Armstrong, S., Evans, B. & Burnstock, G. (1975). Comparison of the effects of intracranial injections of 6-OHDA and guanethidine on consummatory behavior and monoamine depletion. *Pharmacol. Biochem. Behav.* **3** (Suppl. 1), 91-106.
157. Hill, C.E., Watanabe, H. & Burnstock, G. (1975). Distribution and morphology of amphibian extra-adrenal chromaffin tissue. *Cell Tissue Res.* **160**, 371-387.
158. Hill, C.E., Hoult, M. & Burnstock, G. (1975). Extra-adrenal chromaffin cells grown in tissue culture. *Cell Tissue Res.* **161**, 103-117.
159. Zawalinski, V.C., Constantinou, C.E. & Burnstock, G. (1975). Ureteral pacemaker potentials recorded with the sucrose gap technique. *Experientia* **31**, 931-932.
- *160. Burnstock, G. (1975). Measurement of adenine nucleotides. In: *Methods in Pharmacology. Vol. 3. Smooth Muscle*. Eds. E.E. Daniel & D.M. Paton, Plenum Press, New York. pp. 629-636.

- *161. Furness, J.B. & Burnstock, G. (1975). Role of circulating catecholamines in the gastrointestinal tract. In: *Handbook of Physiology, Section 7, Endocrinology. Vol. VI. Adrenal Gland.* Eds. H. Blaschko & A.D. Smith, American Physiological Society, Washington. pp. 515-536.
- *162. Burnstock, G. (1975). Comparative studies of purinergic nerves. *J. Exp. Zool.* **194**, 103-133.
163. Hill, C.E. & Burnstock, G. (1975). Amphibian sympathetic ganglia in tissue culture. *Cell Tissue Res.* **162**, 209-233.
164. Unsicker, K., McConnell, J. & Burnstock, G. (1975). Effect of 6-hydroxydopamine on non-nervous tissues. *In vivo* and *in vitro* studies of steroid producing cells. In: *Proceedings of 10th International Congress of Anatomy, Tokyo.* pp. 291.
165. Gröschel-Stewart, U., Chamley, J.H., Campbell, G.R. & Burnstock, G. (1975). Changes in myosin distribution in dedifferentiating and redifferentiating smooth muscle cells in tissue culture. *Cell Tissue Res.* **165**, 13-22.
- *166. Burnstock, G. (1975). ATP and purinergic transmission. In: *Proceedings of 6th International Congress of Pharmacology, Vol. 2, Neurotransmission.* Ed. L. Ahtee, Forssan Kirjapaino Press, Finland. pp. 49-59.
167. Unsicker, K. & Burnstock, G. (1975). Myoid cells in the peritubular tissue (*lamina propria*) of the reptilian testis. *Cell Tissue Res.* **163**, 545-560.
168. Gröschel-Stewart, U., Chamley, J.H., Campbell, G.R. & Burnstock, G. (1975). Dedifferentiation and redifferentiation of vas deferens smooth muscle cells in culture. In: *Proceedings of 4th Workshop Meeting, European Muscle Club, Aarhus, August 1975.*
- *169. Burnstock, G. (1975). Innervation of vascular smooth muscle. In: *Advances in Experimental Medicine, Vol. 57. The Smooth Muscle of the Artery.* Eds. S. Wolf & N.T. Werthessen, Plenum Press, New York. pp. 20-34.
- *170. Burnstock, G. (1975). Control of smooth muscle activity in vessels by adrenergic nerves and circulating catecholamines. In: *Smooth Muscle Pharmacology and Physiology. Les Colloques de l'INSERM, Vol. 50.* INSERM, Paris. pp. 251-264.
171. Hill, C.E., Purves, R.D., Watanabe, H. & Burnstock, G. (1976). Specificity of innervation of iris musculature by sympathetic nerve fibres in tissue culture. *Pflügers Arch.* **361**, 127-134.
172. Watanabe, H. & Burnstock, G. (1976). Junctional subsurface organs in frog sympathetic ganglion cells. *J. Neurocytol.* **5**, 125-136.
173. Cook, R.D. & Burnstock, G. (1976). The ultrastructure of Auerbach's plexus in the guinea-pig. I. Neuronal elements. *J. Neurocytol.* **5**, 171-194.
174. Cook, R.D. & Burnstock, G. (1976). The ultrastructure of Auerbach's plexus in the guinea-pig. II. Non-neuronal elements. *J. Neurocytol.* **5**, 195-206.
175. Sathananthan, A.H. & Burnstock, G. (1976). Evidence for non-cholinergic, non-aminergic innervation of the Venus clam heart. *Comp. Biochem. Physiol.* **55C**, 111-118.

176. Watanabe, H. & Burnstock, G. (1976). A special type of small granule-containing cell in the abdominal para aortic region of the frog. *J. Neurocytol.* **5**, 465-478.
- *177. Burnstock, G. (1976). Do some nerve cells release more than one transmitter? *Neurosci* **1**, 239-248.
- *178. Bevan, J.A., Johannasson, B., Maxwell, R.A., Nedergaard, O.A. & Burnstock, G. (1976). *Vascular Neuroeffector Mechanisms*. Karger, Basel, pp. 1-260.
179. Gröschel-Stewart, U., Chamley, J.H., McConnell, J.D. & Burnstock, G. (1976). Membrane alteration of trypsin-treated smooth muscle cells and penetration by antibodies to myosin. *Histochemistry* **47**, 285-289.
- *180. Burnstock, G. (1976). Purinergic receptors. *J. Theor. Biol.* **62**, 491-503.
- *181. Uehara, Y., Campbell, G.R. & Burnstock, G. (1976). *An Atlas of the Fine Structure of Muscle and its Innervation*. Edward Arnold, London, pp. 1-526.
182. Watanabe, H., Burnstock, G., Jarrott, B. & Louis, W.J. (1976). Mitochondrial abnormalities in human pheochromocytoma. *Cell Tissue Res.* **172**, 281-288.
- *183. Burnstock, G. (1976). Purine nucleotides. In: *Advances in Biochemical Psychopharmacology, 15. First and Second Messengers - New Vistas*. Eds. E. Costa, E. Giacobini & R. Paoletti, Raven Press, New York. pp. 225-235.
- *184. Burnstock, G. (1976). Wiring. In: *Nervous Insights*. Australian Broadcasting Commis. pp. 7-12.
- *185. Burnstock, G. (1976). Nerve growth factor and the long term interaction of autonomic nerves and smooth muscle in transplants and tissue culture. In: *Nerve Growth Factors, Table Ronde Roussel*. UCLAF, 28, pp. 26-30.
186. Fry, G.N., Devine, C.E. & Burnstock, G. (1977). Freeze-fracture studies of nexuses between smooth muscle cells. Close relationship to sarcoplasmic reticulum. *J. Cell Biol.* **72**, 26-34.
- *187. Burnstock, G. (1977). Purine nucleotides and nucleosides as neurotransmitters or neuromodulators in the central nervous system. In: *Neuroregulators and Psychiatric Disorders*. Eds. E. Usdin, D.A. Hamburg & J.D. Barchas, Oxford University Press, New York. pp. 470-477.
188. Chamley, J.H., Gröschel-Stewart, U., Campbell, G.R. & Burnstock, G. (1977). Distinction between smooth muscle, fibroblasts and endothelial cells in culture by the use of fluoresceinated antibodies against smooth muscle actin. *Cell Tissue Res.* **177**, 445-457.
- *189. Burnstock, G. (1977). The purinergic nerve hypothesis. In: *Purine and Pyrimidine Metabolism, Ciba Foundation Symposium No.48*. Elsevier/Excerpta Medica/North Holland, Amsterdam. pp. 295-314.
190. Murdoch, S.D., Evans, B.K., Heath, J.W., Hill, C.E. & Burnstock, G. (1977). Effects of chronic bretylium treatment on the sympathetic neuron and the smooth musculature of the rat. *Eur. J. Pharmacol.* **43**, 225-235.

191. Unsicker, K., Chamley, J.H. & Burnstock, G. (1977). Studies on the interactions between nerve fibres from para- and orthosympathetic ganglia and adreno-cortical and -medullary cells in joint culture. *Cell Tissue Res.* **178**, 533-549.
192. Heath, J.W. & Burnstock, G. (1977). Selectivity of neuronal degeneration produced by chronic guanethidine treatment. *J. Neurocytol.* **6**, 397-405.
193. Unsicker, K., Chamley, J.H. & Burnstock, G. (1977). Interactions between nerve fibres from guinea-pig ciliary ganglia and rat adreno-cortical and medullary cells in joint tissue culture. In: *Synapses*. Eds. G.A. Cottrell & P.N.R. Usherwood, Blackie, Glasgow/London. pp. 359.
- *194. Burnstock, G. (1977). Cholinergic, adrenergic, and purinergic neuromuscular transmission. *Fed. Proc.* **36**, 2434-2438.
195. Burnstock, G. (1977). Autonomic neuroeffector junctions - reflex vasodilatation of the skin. *J. Invest. Dermatol.* **69**, 47-57.
- *196. Burnstock, G. (1977). Purinergic synapses and evolution. In: *Comparative Pharmacology of Synaptic Receptors*. Eds. M.J. Michelson & E.V. Zeimal, Nauka Science Publications, Leningrad. pp. 26-33.
197. Baer, H.P., Frew, R. & Burnstock, G. (1977). Effect of dipyridamole and 6-(2-hydroxy-5-nitro)-benzylthioguanosine on low-frequency-stimulated relaxation in the guinea pig taenia coli. *Can. J. Physiol. Pharmacol.* **55**, 394-398.
198. Louis, W.J., Jarrott, B., Burnstock, G. & Watanabe, H. (1977). Studies of neurotransmitter release in the pathogenesis of hypertension. *Contrib. Nephrol.* **8**, 182-189.
199. Burnstock, G. (1977). Interactions of autonomic nerves and smooth muscle in vitro. *Cell. Neurobiol.* **15**, 131-137.
200. Chamley-Campbell, J., Campbell, G.R., Gröschel-Stewart, U. & Burnstock, G. (1977). FITC-labelled antibody staining of tropomyosin-containing fibrils in smooth, cardiac and skeletal muscle cells, perfusion myoblasts, fibroblasts, endothelial cells and 3T3 cells in culture. *Cell Tissue Res.* **183**, 153-166.
- *201. Burnstock, G. (1977). The ultrastructure of vascular neuroeffector apparatus, with special regard to brain vessels. In: *Neurogenic Control of Brain Circulation. Proceedings of International Symposium Wenner-Gren Vol. 30*. Eds. C. Owman & L. Edvinsson, Pergamon Press, Oxford/New York. pp. 3-14.
202. Burnstock, G., Greenberg, G. & Mongar, J. (1977). Release of granules from cultured mast cells. *Acta Anat.* **99**, 336.
203. Burnstock, G., Dennison, M. & Jones, R. (1978). Chronic stimulation of the hypogastric nerve in the male guinea-pig *in vivo*. [Proceedings of the Physiological Society]. *J. Physiol. (Lond.)* **276**, 2P-3P.
204. Watanabe, H. & Burnstock, G. (1978). Postsynaptic specializations at excitatory and inhibitory cholinergic synapses. *J. Neurocytol.* **7**, 119-133.

205. Burnstock, G. & Wong, H. (1978). Comparison of the effects of ultraviolet light and purinergic nerve stimulation on the guinea-pig taenia coli. *Br. J. Pharmacol.* **62**, 293-302.
- *206. Burnstock, G. (1978). An assessment of purinergic nerve involvement in vasodilatation. In: *Mechanisms of Vasodilatation*. Eds. P.M. Vanhoutte & I. Leusen, Karger, Basel. pp. 278-284.
207. Rutherford, A. & Burnstock, G. (1978). Neuronal and non-neuronal components in the overflow of labelled adenylyl compounds from guinea-pig taenia coli. *Eur. J. Pharmacol.* **48**, 195-202.
- *208. Burnstock, G. (1978). A basis for distinguishing two types of purinergic receptor. In: *Cell Membrane Receptors for Drugs and Hormones: A Multidisciplinary Approach*. Eds. R.W. Straub & L. Bolis, Raven Press, New York. pp. 107-118.
209. Campbell, G.R., Chamley, J.H. & Burnstock, G. (1978). Lack of effect of receptor blockers on the formation of long-lasting associations between sympathetic nerves and cardiac muscle cells in vitro. *Cell Tissue Res.* **187**, 551-553.
210. Burnstock, G., Cocks, T., Crowe, R. & Kasakov, L. (1978). Purinergic innervation of the guinea-pig urinary bladder. *Br. J. Pharmacol.* **63**, 125-138.
211. Burnstock, G., Cocks, T., Kasakov, L. & Wong, H.K. (1978). Direct evidence for ATP release from non-adrenergic, non-cholinergic ("purinergic") nerves in the guinea-pig taenia coli and bladder. *Eur. J. Pharmacol.* **49**, 145-149.
212. De Mey, J., Burnstock, G. & Vanhoutte, P.M. (1978). Differential effects of adenosine and adenosine-triphosphate in canine saphenous veins. *Blood Vessels* **16**, 212-213.
213. Yokota, R., Burnstock, G., Jones, R. & Brown, M.D. (1978). An ultrastructural study of regeneration of minced smooth muscle in the vas deferens of the guinea-pig. *Cell Tissue Res.* **190**, 481-493.
214. Burnstock, G., Yokota, R. & Jones, R. (1978). Reinnervation of regenerating smooth muscle cells in minced vas deferens of the guinea-pig. *Cell Tissue Res.* **190**, 495-508.
215. Burnstock, G., Cocks, T. & Crowe, R. (1978). Evidence for purinergic innervation of the anococcygeus muscle. *Br. J. Pharmacol.* **64**, 13-20.
216. Jessen, K.R., McConnell, J.D., Purves, R.D., Burnstock, G. & Chamley-Campbell, J. (1978). Tissue culture of mammalian enteric neurons. *Brain Res.* **152**, 573-579.
217. Yokota, R. & Burnstock, G. (1978). A dividing granule-containing cell in the pelvic ganglion of the guinea-pig. *Cell Tissue Res.* **192**, 187-192.
218. Davison, J.S., Al-Hassani, M., Crowe, R. & Burnstock, G. (1978). The non-adrenergic, inhibitory innervation of the guinea-pig gallbladder. *Pflügers Arch.* **377**, 43-49.
- *219. Burnstock, G. (1978). Evidence for ATP as a transmitter - possible therapeutic implications. In: *Dimensions in Health Research: Search for the Medicines of Tomorrow*. Eds. H. Weissbach & R.M. Kunz, Academic Press, New York. pp. 167-181.

220. Burnstock, G. (1978). Formation of autonomic neuromuscular junctions *in vitro*. *Zoon* **6**, 225-234.
- *221. Burnstock, G. (1978). Do some sympathetic neurones synthesize and release both noradrenaline and acetylcholine. *Prog. Neurobiol.* **11**, 205-222.
222. Burnstock, G. (1979). Speculations on purinergic nerves in evolution. In: *Advances in Pharmacology and Therapeutics, Vol. 8. Drug-Action Modification - Comparative Pharmacology*. Ed. G. Olive, Pergamon Press, Oxford. pp. 267-273.
223. Brown, C., Burnstock, G. & Cocks, T. (1979). Effects of adenosine 5'-triphosphate (ATP) and β,γ -methylene ATP on the rat urinary bladder. *Br. J. Pharmacol.* **65**, 97-102.
224. Burnstock, G., Crowe, R. & Wong, H.K. (1979). Comparative pharmacological and histochemical evidence for purinergic inhibitory innervation of the portal vein of the rabbit, but not guinea-pig. *Br. J. Pharmacol.* **65**, 377-388.
225. Cocks, T. & Burnstock, G. (1979). Effects of neuronal polypeptides on intestinal smooth muscle; a comparison with non-adrenergic, non-cholinergic nerve stimulation and ATP. *Eur. J. Pharmacol.* **54**, 251-259.
226. Cocks, T., Crowe, R. & Burnstock, G. (1979). Non-adrenergic, non-cholinergic (purinergic?) inhibitory innervation of the rabbit rectococcygeus muscle. *Eur. J. Pharmacol.* **54**, 261-271.
227. Evans, B.K., Honey, M. & Burnstock, G. (1979). Interaction *in vivo* between chronically administered guanethidine and imipramine. *Gen. Pharmacol.* **10**, 79-82.
228. Harper, G.P., Barde, Y.A., Burnstock, G., Carstairs, J.R., Dennison, M.E., Suda, K. & Vernon, C.A. (1979). Guinea pig prostate is a rich source of nerve growth factor. *Nature* **279**, 160-162.
229. Bannister, R., Crowe, R., Eames, R. & Burnstock, G. (1979). Defective catecholamine fluorescence in the sympathetic perivascular nerve plexuses in autonomic failure. *Neurology* **29**, 575.
230. De Mey, J., Burnstock, G. & Vanhoutte, P.M. (1979). Modulation of the evoked release of noradrenaline in canine saphenous vein via presynaptic receptors for adenosine but not ATP. *Eur. J. Pharmacol.* **55**, 401-405.
231. Evans, B.K., Heath, J.W. & Burnstock, G. (1979). Reinnervation following guanethidine-induced sympathectomy of adult rats. *J. Neurocytol.* **8**, 381-400.
232. Burnstock, G. (1979). Morphological changes produced by drugs acting on the autonomic nervous system. *Pharmacol. Ther. [B]* **5**, 49-53.
233. Burnstock, G. (1979). The ultrastructure of autonomic cholinergic nerves and junctions. *Prog. Brain Res.* **49**, 3-21.
- *234. Burnstock, G. (1979). Past and current evidence for the purinergic nerve hypothesis. In: *Physiological and Regulatory Functions of Adenosine and Adenine Nucleotides*. Eds. H.P. Baer & G.I. Drummond, Raven Press, New York. pp. 3-32.

- *235. Burnstock, G. (1979). Non-adrenergic, non-cholinergic nerves in the intestine and their possible involvement in secretion. In: *Mechanisms of Intestinal Secretion. KROC Foundation Series, Vol. 12*. Ed. H.J. Binder, Alan Liss, New York. pp. 147-174.
236. Jessen, K.R., Polak, J.M., Van Noorden, S., Bryant, M.G., Bloom, S.R. & Burnstock, G. (1979). A new approach to the demonstration of the enteric plexus origin of peptide-containing nerves by immunocytochemistry and radioimmunoassay. *Gastroenterology* **76**, 1161(Abstract)
237. Evans, B.K. & Burnstock, G. (1979). Chronic guanethidine treatment of female rats including effects on the fetus. *J. Reprod. Fertil.* **56**, 715-724.
238. Banks, B.E.C., Brown, C., Burgess, G.M., Burnstock, G., Claret, M., Cocks, T., Jenkinson, D.H. & Parson, H. (1979). Some peripheral activities of apamin. *Toxicon* **17 (Suppl. 1)**, 4.
239. Evans, B.K., Heath, J.W. & Burnstock, G. (1979). Effects of chronic guanethidine on the sympathetic nervous system of mouse and toad. *Comp. Biochem. Physiol.* **63C**, 81-92.
- *240. Burnstock, G. (1979). Autonomic innervation and transmission. *Br. Med. Bull.* **35**, 255-262.
241. Jessen, K.R., Mirsky, R., Dennison, M.E. & Burnstock, G. (1979). GABA may be a neurotransmitter in the vertebrate peripheral nervous system. *Nature* **281**, 71-74.
- *242. Burnstock, G. (1979). Interactions of cholinergic, adrenergic, purinergic and peptidergic neurons in the gut. In: *Integrative Functions of the Autonomic Nervous System*. Eds. C. Brooks, K. Koizumi & A. Sato, University of Tokyo Press, Tokyo. pp. 145-158.
- *243. Burnstock, G., Hökfelt, T., Gershon, M.D., Iverson, L.L., Kosterlitz, H.W. & Szurszewski, J.H. (1979). Non-adrenergic, non-cholinergic autonomic neurotransmission mechanisms. In: *Neuroscience Research Program Bulletin 17, No.3*. MIT Press, Cambridge, MA. pp. 1-149.
- *244. Burnstock, G. (1979). Non-adrenergic, non-cholinergic enteric neurones: their roles and interactions with classical nerves. In: *Hormone Receptors in Digestion and Nutrition*. Eds. G. Rosselin, P. Fromageot & S. Bonfils, Elsevier/North-Holland, Amsterdam. pp. 481-492.
245. Banks, B.E.C., Brown, C., Burgess, G.M., Burnstock, G., Claret, M., Cocks, T.M. & Jenkinson, D.H. (1979). Apamin blocks certain neurotransmitter-induced increases in potassium permeability. *Nature* **282**, 415-417.
- *246. Berger, P.J. & Burnstock, G. (1979). Autonomic nervous system. In: *The Biology of the Reptilia, Vol. 10, Neurology B*. Eds. C. Gans, R.G. Northcutt & P. Ulinski, Academic Press, London/New York. pp. 1-57.
247. Burnstock, G. (1980). Purinergic modulation of cholinergic transmission. *Gen. Pharmacol.* **11**, 15-18.
248. Jessen, K.R., Polak, J.M., Van Noorden, S., Bloom, S.R. & Burnstock, G. (1980). Peptide-containing neurones connect the two ganglionated plexuses of the enteric nervous system. *Nature* **283**, 391-393.

- *249. Burnstock, G. (1980). Evidence for purinergic nerves. In: *Vascular Neuroeffector Mechanisms*. Eds. J.A. Bevan, T. Godfraind, R.A. Maxwell & P.M. Vanhoutte, Raven Press, New York. pp. 181-182.
250. Travo, P., Barrett, G. & Burnstock, G. (1980). Differences in proliferation of primary cultures of vascular smooth muscle cells taken from male and female rats. *Blood Vessels* **17**, 110-116.
- *251. Burnstock, G., Chamley, J. & Campbell, G.R. (1980). The innervation of the arteries. In: *Structure and Function of the Circulation, Vol. I*. Eds. C.J. Schwartz, N.T. Werthessen & S. Wolf, Plenum Press, New York. pp. 729-767.
252. Cowen, T. & Burnstock, G. (1980). Quantitative analysis of the density and pattern of adrenergic innervation of blood vessels. A new method. *Histochemistry* **66**, 19-34.
- *253. Burnstock, G. (1980). Cholinergic and purinergic regulation of blood vessels. In: *Handbook of Physiology, Section 2: The Cardiovascular System. Vol. II. Vascular Smooth Muscle*. Eds. D.F. Bohr, A.D. Somlyo, H.W. Sparks & S.R. Geiger, American Physiological Society/Waverly Press, Baltimore, MD. pp. 567-612.
254. Ferrero, J.D., Cocks, T. & Burnstock, G. (1980). A comparison between ATP and bradykinin as possible mediators of the responses of smooth muscle to non-adrenergic non-cholinergic nerves. *Eur. J. Pharmacol.* **63**, 295-302.
255. Burnstock, G. (1980). Development of connections between autonomic neurones and muscle target tissues in cultures. In: *Proceedings of 1st Meeting of the International Society for Developmental Neuroscience*. pp. 163.
- *256. Burnstock, G. (1980). Purinergic receptors in the heart. In: *Cardiovascular Receptors: Molecular, Pharmacological and Therapeutic Aspects*. Eds. P.I. Korner & J.A. Angus, *Circ.Res.* **46 (Suppl. 1)**, pp. 175-182.
257. Greenberg, G., Grant, A., Burnstock, G. & Hermon-Taylor, J. (1980). Pancreatic cancer and lymphocyte surveillance *in vitro*. *Cell Biol. Int. Rep.* **4**, 757.
- *258. Burnstock, G. (1980). Neurotransmitters, cotransmitters, neuromodulators and trophic factors in the autonomic nervous system. *Pontificiae Academiae Scientiarum, Scripta Varia* **45**, 253-286.
- *259. Burnstock, G. (1980). Do some nerve cells release more than one transmitter? In: *Commentaries in the Neurosciences*. Eds. A.D. Smith, R. Llinas & P.G. Kostyuk, Pergamon Press, Oxford. pp. 151-160.
260. Komuro, T. & Burnstock, G. (1980). The fine structure of smooth muscle cells and their relationship to connective tissue in the rabbit portal vein. *Cell Tissue Res.* **210**, 257-267.
261. Jessen, K.R., Saffrey, M.J., Van Noorden, S., Bloom, S.R., Polak, J.M. & Burnstock, G. (1980). Immunohistochemical studies of the enteric nervous system in tissue culture and *in situ*: localization of vasoactive intestinal polypeptide (VIP), substance-P and enkephalin immunoreactive nerves in the guinea-pig gut. *Neuroscience* **5**, 1717-1735.
262. Mackenzie, I. & Burnstock, G. (1980). Evidence against vasoactive intestinal polypeptide being the non-adrenergic, non-cholinergic inhibitory transmitter

released from nerves supplying the smooth muscle of the guinea-pig taenia coli. *Eur. J. Pharmacol.* **67**, 255-264.

263. Burnstock, G. (1980). Purinergic nerves and receptors. *Prog. Biochem. Pharmacol.* **16**, 141-154.
264. Trams, E.J., Kauffman, H. & Burnstock, G. (1980). A proposal for the role of ecto-enzymes and adenylates in traumatic shock. *J. Theor. Biol.* **87**, 609-621.
- *265. Burnstock, G. & Wong, H. (1980). Systematic pharmacology of adrenergic agonists and antagonists: Effects on the digestive system. In: *Adrenergic Activators and Inhibitors. Handbook of Experimental Pharmacology - Catecholamines, Vol. 54/II*. Ed. L. Szekeres, Springer-Verlag, Berlin/Heidelberg. pp. 129-159.
266. Brown, C.M. & Burnstock, G. (1981). The structural conformation of the polyphosphate chain of the ATP molecule is critical for its promotion of prostaglandin biosynthesis. *Eur. J. Pharmacol.* **69**, 81-86.
- *267. Burnstock, G. (1981). Development of smooth muscle and its innervation. In: *Smooth Muscle: An Assessment of Current Knowledge*. Eds. E. Bülbring, A.F. Brading, A.W. Jones & T. Tomita, Edward Arnold, London. pp. 431-457.
268. Davies, A.M., Lumsden, A.G.S., Slavkin, H.C. & Burnstock, G. (1981). Influence of nerve growth factor on the embryonic mouse trigeminal ganglion in culture. *Dev. Neurosci.* **4**, 150-156.
269. Burnstock, G., Coutts, A.A., Greaves, M.W. & Jorizzo, J. (1981). Mechanism of vasodilatation due to adenosine triphosphate and its metabolites in humans. *Br. J. Pharmacol.* **72**, 516P.
- *270. Burnstock, G. (1981). Review lecture. Neurotransmitters and trophic factors in the autonomic nervous system. *J. Physiol. (Lond.)* **313**, 1-35.
271. Brown, C.M. & Burnstock, G. (1981). Evidence in support of the P₁/P₂ purinoceptor hypothesis in the guinea-pig taenia coli. *Br. J. Pharmacol.* **73**, 617-624.
- *272. Burnstock, G. (1981). *Purinergic Receptors. Receptors and Recognition, Series B, Vol. 12*. Chapman & Hall, London, pp. 1-365.
- *273. Burnstock, G. (1981). Physiology of gastrointestinal nerves. In: *Gut Hormones*. 2nd edn. Eds. S.R. Bloom & J.M. Polak, Churchill Livingstone, Edinburgh. pp. 482-486.
274. Burnstock, G. (1981). Pathophysiology of migraine: a new hypothesis. *Lancet* **i**, 1397-1399.
- *275. Burnstock, G. & Brown, C.M. (1981). An introduction to purinergic receptors. In: *Purinergic Receptors. Receptors and Recognition, Series B, Vol. 12*. Ed. G. Burnstock, Chapman & Hall, London. pp. 1-45.
276. Lumsden, A.G.S., Davies, A.M., Slavkin, H.C. & Burnstock, G. (1981). Neurite outgrowth from murine sensory ganglia cultured in a serumless medium. *Dev. Neurosci.* **4**, 176-180.

277. Jorizzo, J.L., Coutts, A.A., Greaves, M.W. & Burnstock, G. (1981). A comparison of substance P and adenosine triphosphate, as mediators of cutaneous inflammation. *Clin. Res.* **29**, 600A.
- *278. Chamley-Campbell, J.H., Campbell, G.R. & Burnstock, G. (1981). Contraction and innervation of smooth muscle cells in culture. In: *Structure and Function of the Circulation, Vol. 3*. Eds. C.J. Schwartz, N.T. Werthessen & S. Wolf, Plenum Press, New York. pp. 401-425.
- *279. Campbell, G.R., Chamley-Campbell, J.H. & Burnstock, G. (1981). Differentiation and phenotypic modulation of arterial smooth muscle cells. In: *Structure and Function of the Circulation, Vol. 3*. Eds. C.J. Schwartz, N.T. Werthessen & S. Wolf, Plenum Press, New York. pp. 357-399.
280. Burnstock, G. & Meghji, P. (1981). Distribution of P₁- and P₂-purinoceptors in the guinea-pig and frog heart. *Br. J. Pharmacol.* **73**, 879-885.
281. Crowe, R. & Burnstock, G. (1981). Perinatal development of quinacrine-positive neurons in the rabbit gastrointestinal tract. *J. Auton. Nerv. Syst.* **4**, 217-230.
- *282. Burnstock, G. (1981). Current approaches to development of the autonomic nervous system: clues to clinical problems. pp. 1-18. Chairman's concluding remarks. pp. 371-373. In: *Development of the Autonomic Nervous System. Ciba Foundation Symposium 83*. Eds. K. Elliot & G. Lawrenson, Pitman Medical, London.
- *283. Burnstock, G. (1981). Nervous control of cerebral blood vessels: a new hypothesis for the mechanisms underlying migraine. In: *Progress in Migraine Research I*. Eds. F. Clifford-Rose & K.J. Zilkha, Pitman Medical, London. pp. 17-32.
284. Burnstock, G. (1981). Ultrastructural identification of neurotransmitters. *Scand. J. Gastroenterol.* **16 (Suppl. 70)**, 1-9.
285. White, T., Potter, P., Moody, C. & Burnstock, G. (1981). Tetrodotoxin-resistant release of ATP from guinea-pig taenia coli and vas deferens during electrical field stimulation in the presence of luciferin-luciferase. *Can. J. Physiol. Pharmacol.* **59**, 1094-1100.
286. Griffith, S.G., Meghji, P., Moody, C.J. & Burnstock, G. (1981). 8-phenyltheophylline: a potent P₁-purinoceptor antagonist. *Eur. J. Pharmacol.* **75**, 61-64.
287. Coutts, A.A., Jorizzo, J.L., Greaves, M.W. & Burnstock, G. (1981). Mechanism of vasodilatation due to substance P in humans. *Br. J. Dermatol.* **105**, 354-355.
288. Crowe, R. & Burnstock, G. (1981). Comparative studies of quinacrine-positive neurones in the myenteric plexus of stomach and intestine of guinea-pig, rabbit and rat. *Cell Tissue Res.* **221**, 93-107.
289. Coutts, A.A., Jorizzo, J.L., Eady, R.A.J., Greaves, M.W. & Burnstock, G. (1981). Adenosine triphosphate-evoked vascular changes in human skin: mechanism of action. *Eur. J. Pharmacol.* **76**, 391-401.
290. Bannister, R., Crowe, R., Eames, R. & Burnstock, G. (1981). Adrenergic innervation in autonomic failure. *Neurology* **31**, 1501-1506.

291. Brown, C., Burnstock, G., Cusack, N.J., Meghji, P. & Moody, C.J. (1982). Evidence for stereospecificity of the P₁-purinoceptor. *Br. J. Pharmacol.* **75**, 101-107.
292. Moody, C.J. & Burnstock, G. (1982). Evidence for the presence of P₁-purinoceptors on cholinergic nerve terminals in the guinea-pig ileum. *Eur. J. Pharmacol.* **77**, 1-9.
293. Saffrey, M.J., Polak, J.M. & Burnstock, G. (1982). Distribution of vasoactive intestinal polypeptide-, substance P-, enkephalin and neurotensin-like immunoreactive nerves in the chicken gut during development. *Neuroscience* **7**, 279-293.
294. Komuro, T., Baluk, P. & Burnstock, G. (1982). An ultrastructural study of nerve profiles in the myenteric plexus of the rabbit colon. *Neuroscience* **7**, 295-305.
295. Hanani, M., Baluk, P. & Burnstock, G. (1982). Myenteric neurons express electrophysiological and morphological diversity in tissue culture. *J. Auton. Nerv. Syst.* **5**, 155-164.
296. Griffith, S.G., Crowe, R., Lincoln, J., Haven, A.J. & Burnstock, G. (1982). Regional differences in the density of perivascular nerves and varicosities, noradrenaline content and responses to nerve stimulation in the rabbit ear artery. *Blood Vessels* **19**, 41-52.
- *297. Burnstock, G. (1982). Studies of autonomic nerves of gut - past, present and future. In: *Autonomic Nerves of the Gut*. Eds. J.M. Polak, S.R. Bloom, N.A. Wright & M.J. Daly, *Scand. J. Gastroenterol.* **17 (Suppl. 71)**, pp. 135-138.
298. Cowen, T., MacCormick, D.E.M., Toff, W.D., Burnstock, G. & Lumley, J.S.P. (1982). The effect of surgical procedures on blood vessel innervation. A fluorescence histochemical study of degeneration and regrowth of perivascular adrenergic nerves. *Blood Vessels* **19**, 65-78.
- *299. Jessen, K.R. & Burnstock, G. (1982). The enteric nervous system in tissue culture: a new mammalian model for the study of complex nervous networks. In: *Trends in Autonomic Pharmacology, Vol. II*. Ed. S. Kalsner, Urban & Schwarzenberg, Baltimore/Munich. pp. 95-115.
300. Cowen, T., Haven, A.J., Wen-Qin, C., Gallen, D.D., Franc, F. & Burnstock, G. (1982). Development and ageing of perivascular adrenergic nerves in the rabbit. A quantitative fluorescence histochemical study using image analysis. *J. Auton. Nerv. Syst.* **5**, 317-336.
301. Mackenzie, I., Burnstock, G. & Dolly, J.O. (1982). The effects of purified botulinum neurotoxin type A on cholinergic, adrenergic and non-adrenergic, atropine-resistant autonomic neuromuscular transmission. *Neuroscience* **7**, 997-1006.
302. Burnstock, G. (1982). Adenine nucleotides and nucleosides in cerebral hypoxia. In: *Cerebral Hypoxia in the Pathogenesis of Migraine. Progress in Neurobiology Series*. Eds. F.C. Rose & W.K. Amery, Pitman Press, Bath. pp. 77-81.
- *303. Burnstock, G. (1982). Cytochemical studies in the enteric nervous system. In: *Cytochemical Methods in Neuroanatomy. Neurology and Neurobiology Vol. 1*. Eds. V. Chan-Palay & S.L. Palay, Alan R. Liss, New York, NY. pp. 129-149.

304. Jessen, K.R., Saffrey, M.J., Baluk, P., Buckley, N. & Burnstock, G. (1982). Tissue culture of the enteric nervous system. *Scand. J. Gastroenterol.* **17 (Suppl. 171)**, 173.
305. Komuro, T., Baluk, P. & Burnstock, G. (1982). An ultrastructural study of neurons and non-neuronal cells in the myenteric plexus of the rabbit colon. *Neuroscience* **7**, 1797-1806.
306. Crowe, R. & Burnstock, G. (1982). Fluorescent histochemical localisation of quinacrine-positive neurones in the guinea-pig and rabbit atrium. *Cardiovasc. Res.* **16**, 384-390.
307. Burnstock, G. (1982). Structural and functional studies of autonomic nerves in the gut. *Acta Physiol. Scand.* **S508**, 25(Abstract)
308. Gallen, D.D., Cowen, T., Griffith, S.G., Haven, A.J. & Burnstock, G. (1982). Functional and non-functional nerve-smooth muscle transmission in the renal arteries of the newborn and adult rabbit and guinea-pig. *Blood Vessels* **19**, 237-246.
309. Griffith, S.G., Lincoln, J. & Burnstock, G. (1982). Serotonin as a neurotransmitter in cerebral arteries. *Brain Res.* **247**, 388-392.
310. Hanani, M., Baluk, P. & Burnstock, G. (1982). Electrophysiology and morphology of myenteric neurons in tissue culture. *Neurosci. Lett.* **Suppl. 10**, S231(Abstract)
- *311. Burnstock, G. (1982). Neuromuscular transmitters and trophic factors. In: *Advanced Medicine 18*. Ed. M. Sarner, Pitman Medical, London. pp. 143-148.
- *312. Burnstock, G. (1982). The co-transmitter hypothesis, with special reference to the storage and release of ATP with noradrenaline and acetylcholine. In: *Co-transmission*. Ed. A.C. Cuervo, Macmillan Press, London. pp. 151-163.
313. Crowe, R. & Burnstock, G. (1982). Small intensely fluorescent (SIF) cells and sympathetic nerves in the adult rabbit portal vein and during perinatal development. *Cell Tissue Res.* **227**, 601-607.
314. Cowen, T. & Burnstock, G. (1982). Image analysis of catecholamine fluorescence. *Brain Res. Bull.* **9**, 81-86.
315. Burnstock, G., Cusack, N.J. & Kasakov, L. (1982). An ATP-regenerating system potentiates the purinergic responses of the rat urinary bladder and guinea-pig taenia coli. In: *Proceedings of a Symposium on Physiology and Pharmacology of Smooth Muscle, Bulgaria, 1982*. pp. 45.
316. Cusack, N.J., Planker, M., Brown, C., Meghji, P., Moody, C.J., Hills, J.M., MacKenzie, I.A. & Burnstock, G. (1982). Effects of enantiomers of adenosine 5'-triphosphate (ATP) and of adenosine, and their analogues, on isolated smooth muscle. In: *Proceedings of a Symposium on Physiology and Pharmacology of Smooth Muscle, Bulgaria, 1982*. p. 49.
317. Török, J. & Burnstock, G. (1982). Modulation of sympathetic neurotransmission by ATP and adenosine in the portal vein. *Physiol. Bohemoslov.* **31**, 476(Abstract)

- *318. Burnstock, G. (1982). Neuropeptides as trophic factors. In: *Systemic Role of Regulatory Peptides. Symposia Medica Hoechst*. Eds. S. Bloom, J.M. Polak & E. Lindenlaub, Schattauer Verlag, Stuttgart/New York. pp. 423-441.
319. Kasakov, L. & Burnstock, G. (1983). The use of the slowly degradable analog, α,β -methylene ATP, to produce desensitisation of the P₂-purinoceptor: effect on non-adrenergic, non-cholinergic responses of the guinea-pig urinary bladder. *Eur. J. Pharmacol.* **86**, 291-294.
320. Jessen, K.R., Saffrey, M.J. & Burnstock, G. (1983). The enteric nervous system in tissue culture. I. Cell types and their interactions in explants of the myenteric and submucous plexuses from guinea pig, rabbit and rat. *Brain Res.* **262**, 17-35.
321. Baluk, P., Jessen, K.R., Saffrey, M.J. & Burnstock, G. (1983). The enteric nervous system in tissue culture. II. Ultrastructural studies of cell types and their relationships. *Brain Res.* **262**, 37-47.
322. Jessen, K.R., Saffrey, M.J., Baluk, P., Hanani, M. & Burnstock, G. (1983). The enteric nervous system in tissue culture. III. Studies on neuronal survival and the retention of biochemical and morphological differentiation. *Brain Res.* **262**, 49-62.
323. Griffith, S.G. & Burnstock, G. (1983). Immunohistochemical demonstration of serotonin in nerves supplying human cerebral and mesenteric blood vessels: some speculations about their involvement in vascular disorders. *Lancet* **i**, 561-562.
- *324. Burnstock, G. (1983). Purinergic nerves and smooth muscle of the gut. In: *Functional Disorders of the Digestive Tract*. Ed. W.Y. Chey, Raven Press, New York. pp. 79-85.
325. Armati-Gulson, P. & Burnstock, G. (1983). The development of adrenergic innervation in some human foetal blood vessels. *J. Auton. Nerv. Syst.* **7**, 111-118.
- *326. Burnstock, G. (1983). Autonomic neurotransmitters and trophic factors. *J. Auton. Nerv. Syst.* **7**, 213-217.
327. Hills, J.M., Collis, C.S. & Burnstock, G. (1983). The effects of vasoactive intestinal polypeptide on the electrical activity of guinea-pig intestinal smooth muscle. *Eur. J. Pharmacol.* **88**, 371-376.
328. Burnstock, G. & Meghji, P. (1983). The effect of adenylyl compounds on the rat heart. *Br. J. Pharmacol.* **79**, 211-218.
329. Meghji, P. & Burnstock, G. (1983). An unusual excitatory action of adenosine on the ventricular muscle of the South African clawed toad (*Xenopus laevis*). *Eur. J. Pharmacol.* **89**, 251-258.
- *330. Burnstock, G. (1983). A comparison of receptors for adenosine and adenine nucleotides. In: *Regulatory Functions of Adenosine*. Eds. R.M. Berne, T.W. Rall & R. Rubio, Martinus Nijhoff, The Hague. pp. 49-62.
331. Buckley, N. & Burnstock, G. (1983). Autoradiographic demonstration of peripheral adenosine binding sites using [³H]NECA. *Brain Res.* **269**, 374-377.

332. Jones, R., Dennison, M.E. & Burnstock, G. (1983). The effect of decentralisation or chronic hypogastric nerve stimulation in vivo on the innervation and responses of the guinea-pig vas deferens. *Cell Tissue Res.* **232**, 265-279.
333. Jones, R., Yokota, R. & Burnstock, G. (1983). The long-term influence of decentralisation or preganglionic hypogastric nerve stimulation in vivo on the reinnervation of minced vas deferens in the guinea-pig. *Cell Tissue Res.* **232**, 281-293.
334. Yokota, R. & Burnstock, G. (1983). Synaptic organisation of the pelvic ganglion in the guinea-pig. *Cell Tissue Res.* **232**, 379-397.
335. Yokota, R. & Burnstock, G. (1983). Decentralisation of neurones in the pelvic ganglion of the guinea-pig: reinnervation by adrenergic nerves. *Cell Tissue Res.* **232**, 399-411.
- *336. Burnstock, G. & Griffith, S.G. (1983). Neurohumoral control of the vasculature. In: *Biology and Pathology of the Vessel Wall. A Modern Appraisal*. Ed. N. Woolf, Praeger, Eastbourne. pp. 15-40.
337. Burnstock, G., Cusack, N.J., Hills, J.M., Mackenzie, I. & Meghji, P. (1983). Studies on the stereoselectivity of the P₂-purinoceptor. *Br. J. Pharmacol.* **79**, 907-913.
338. Burnstock, G. (1983). Recent concepts of chemical communication between excitable cells. In: *Dale's Principle and Communication between Neurones*. Ed. N.N. Osborne, Pergamon Press, Oxford. pp. 7-35.
339. Meldrum, L.A. & Burnstock, G. (1983). Evidence that ATP acts as a co-transmitter with noradrenaline in sympathetic nerves supplying the guinea-pig vas deferens. *Eur. J. Pharmacol.* **92**, 161-163.
340. Greenberg, G. & Burnstock, G. (1983). A novel cell-to-cell interaction between mast cells and other cell types. *Exp. Cell Res.* **147**, 1-13.
- *341. Burnstock, G., Vrbová, G. & O'Brien, R.(Eds.). (1983). *Somatic and Autonomic Nerve-Muscle Interactions*. Elsevier/North-Holland, Amsterdam, pp. 1-390.
342. Saffrey, M.J., Marcus, N., Jessen, K.R. & Burnstock, G. (1983). Distribution of neurons with high-affinity uptake sites for GABA in the myenteric plexus of the guinea-pig, rat and chicken. *Cell Tissue Res.* **234**, 231-235.
343. Cole, D.F., Bloom, S.R., Burnstock, G., Butler, J.M., McGregor, G.P., Saffrey, M.J., Unger, W.G. & Zhang, S.Q. (1983). Increase in SP-like immunoreactivity in nerve fibres of rabbit iris and ciliary body one to four months following sympathetic denervation. *Exp. Eye Res.* **37**, 191-197.
344. Meghji, P. & Burnstock, G. (1983). Absence of purinoceptors in the heart of the turtle (*Emys orbicularis*). *Comp. Biochem. Physiol.* **76C**, 255-257.
345. Meghji, P. & Burnstock, G. (1983). The effects of adenylyl compounds on the heart of the axolotl (*Ambystoma mexicanum*). *Comp. Biochem. Physiol.* **76C**, 319-326.
346. Griffith, S.G. & Burnstock, G. (1983). Serotonergic neurons in human fetal intestine: an immunohistochemical study. *Gastroenterology* **85**, 929-937.

347. Crowe, R., Lincoln, J., Blacklay, P.F., Pryor, J.P., Lumley, J.S.P. & Burnstock, G. (1983). Vasoactive intestinal polypeptide-like immunoreactive nerves in diabetic penis. A comparison between streptozotocin-treated rats and man. *Diabetes* **32**, 1075-1077.
- *348. Burnstock, G. (1983). Non-adrenergic, non-cholinergic transmitters in the enteric nervous system. Lecture on GI motility. *Ital. J. Gastroenterol.* **15**, 267-273.
349. Buckley, N. & Burnstock, G. (1983). Autoradiographic localisation of binding sites for muscarinic and adenosine receptor ligands. *Neurosci. Lett. Suppl.* **14**, S46.
- *350. Burnstock, G. & Griffith, S.G. (1983). Innervation of microvascular smooth muscle. In: *Progress in Applied Microcirculation, Vol.3: Vasomotion and Quantitative Capillaroscopy*. Eds. K. Messmer & F. Hammersen, S.Karger, Basel. pp. 19-39.
351. Lincoln, J., Haven, A.J., Sawyer, M. & Burnstock, G. (1984). The smooth muscle of rat bladder in the early stages of streptozotocin-induced diabetes. *Br. J. Urol.* **56**, 24-30.
352. Moody, C.J., Meghji, P. & Burnstock, G. (1984). Stimulation of P₁-purinoceptors by ATP depends partly on its conversion to AMP and adenosine and partly on direct action. *Eur. J. Pharmacol.* **97**, 47-54.
353. Lincoln, J., Crockett, M., Haven, A.J. & Burnstock, G. (1984). Rat bladder in the early stages of streptozotocin-induced diabetes: adrenergic and cholinergic innervation. *Diabetologia* **26**, 81-87.
354. Burnstock, G., Hills, J.M. & Hoyle, C.H.V. (1984). Evidence that the P₁-purinoceptor in the guinea-pig taenia coli is an A₂-subtype. *Br. J. Pharmacol.* **81**, 533-541.
- *355. Buckley, N. & Burnstock, G. (1984). Autoradiographic localization of peripheral muscarinic receptors. In: *Subtypes of Muscarinic Receptors. Trends in Pharmacological Sciences (Suppl.)*. Eds. B.I. Hirschowitz, R. Hammer, A. Giachetti, J.J. Keirns & R.R. Levine, Elsevier, Cambridge. pp. 55-59.
356. Buckley, N. & Burnstock, G. (1984). Autoradiographic localisation of muscarinic receptors in guinea-pig intestine: distribution of high and low affinity agonist binding sites. *Brain Res.* **294**, 15-22.
357. Lincoln, J., Bokor, J.T., Crowe, R., Griffith, S.G., Haven, A.J. & Burnstock, G. (1984). Myenteric plexus in streptozotocin-treated rats. Neurochemical and histochemical evidence for diabetic neuropathy in the gut. *Gastroenterology* **86**, 654-661.
358. Hills, J., Meldrum, L.A., Klarskov, P. & Burnstock, G. (1984). A novel non-adrenergic, non-cholinergic nerve-mediated relaxation of the pig bladder neck: an examination of possible neurotransmitter candidates. *Eur. J. Pharmacol.* **99**, 287-293.
359. Sneddon, P. & Burnstock, G. (1984). Inhibition of excitatory junction potentials in guinea-pig vas deferens by α,β -methylene-ATP: further evidence for ATP and noradrenaline as cotransmitters. *Eur. J. Pharmacol.* **100**, 85-90.
360. Burnstock, G., Cusack, N.J. & Meldrum, L.A. (1984). Effects of phosphorothioate analogues of ATP, ADP and AMP on guinea-pig taenia coli and urinary bladder. *Br. J. Pharmacol.* **82**, 369-374.

361. Burnstock, G. & Sneddon, P. (1984). Evidence that excitatory junction potentials in response to sympathetic nerve stimulation of some smooth muscles are mediated by ATP. *J. Physiol. (Lond.)* **351**, 28P
362. Burnstock, G., Crowe, R., Kennedy, C. & Török, J. (1984). Indirect evidence that purinergic modulation of perivascular adrenergic neurotransmission in the portal vein is a physiological process. *Br. J. Pharmacol.* **82**, 359-368.
363. Meghji, P. & Burnstock, G. (1984). The effect of adenylyl compounds on the heart of the dogfish, *Scyliorhinus canicula*. *Comp. Biochem. Physiol.* **77C**, 295-300.
364. Kennedy, C. & Burnstock, G. (1984). Evidence for an inhibitory prejunctional P₁-purinoceptor in the rat portal vein with characteristics of the A₂ rather than of the A subtype. *Eur. J. Pharmacol.* **100**, 363-368.
365. Meghji, P. & Burnstock, G. (1984). Actions of some autonomic agents on the heart of the trout (*Salmo gairdneri*) with emphasis on the effects of adenylyl compounds. *Comp. Biochem. Physiol.* **78C**, 69-75.
366. Legay, C., Saffrey, M.J. & Burnstock, G. (1984). Coexistence of immunoreactive substance P and serotonin in neurones of the gut. *Brain Res.* **302**, 379-382.
367. Saba, H., Cowen, T., Haven, A.J. & Burnstock, G. (1984). Reduction in noradrenergic perivascular nerve density in the left and right cerebral arteries of old rabbits. *J. Cereb. Blood Flow Metab.* **4**, 284-289.
368. Saffrey, M.J., Legay, C. & Burnstock, G. (1984). Development of 5-hydroxytryptamine-like immunoreactive neurones in cultures of the myenteric plexus from the guinea-pig caecum. *Brain Res.* **304**, 105-116.
369. Crowe, R. & Burnstock, G. (1984). Quinacrine-positive neurones in some regions of the guinea-pig brain. *Brain Res. Bull.* **12**, 387-391.
370. Hanani, M. & Burnstock, G. (1984). Substance P evokes slow and fast responses in cultured myenteric neurons of the guinea pig. *Neurosci. Lett.* **48**, 19-23.
371. Burnstock, G., Griffith, S.G. & Sneddon, P. (1984). Autonomic nerves in the precapillary vessel wall. *J. Cardiovasc. Pharmacol.* **6**, S344-S353.
372. Appenzeller, O., Dhital, K.K., Cowen, T. & Burnstock, G. (1984). The nerves to blood vessels supplying blood to nerves: the innervation of vasa nervorum. *Brain Res.* **304**, 383-386.
- *373. Sneddon, P. & Burnstock, G. (1984). "Do we need γ -receptors?". *Trends Pharmacol. Sci.* **5**, 264-265.
374. Burnstock, G. & Sneddon, P. (1984). Pre-junctional control of excitatory junction potentials in isolated guinea-pig vas deferens by P₁-purinoceptors. *J. Physiol. (Lond.)* **353**, 94P.
375. Buckley, N.J. & Burnstock, G. (1984). Distribution of muscarinic receptors on cultured myenteric neurons. *Brain Res.* **310**, 133-137.

376. Delbro, D., Hedlund, H., Kennedy, C. & Burnstock, G. (1984). Purinoceptor-mediated vasoconstriction and vasodilatation in the rat *in vivo*. *Acta Physiol. Scand.* **121**, A10.
377. Burnstock, G. & Sneddon, P. (1984). Is the contractile response of the guinea-pig vas deferens to neuronally released noradrenaline dependent upon membrane depolarization? *J. Physiol. (Lond.)* **354**, 51P.
378. Appenzeller, O., Albuquerque, N.M., Burnstock, G. & Dhital, K.K. (1984). Vasa nervorum: adrenergic, peptidergic and serotonergic perivascular nerves. *Neurology* **34 (Suppl. 1)**, 181-182.
379. Mackenzie, I. & Burnstock, G. (1984). Neuropeptide action on the guinea-pig bladder; a comparison with the effects of field stimulation and ATP. *Eur. J. Pharmacol.* **105**, 85-94.
380. Sneddon, P., Meldrum, L.A. & Burnstock, G. (1984). Control of transmitter release in guinea-pig vas deferens by prejunctional P₁-purinoceptors. *Eur. J. Pharmacol.* **105**, 293-299.
- *381. Burnstock, G. (1984). Drugs influencing purinergic mechanisms. In: *Pharmacology of the Vascular Wall*. Ed. J. Esplugues, University Press, Valencia. pp. 369-384.
382. Sneddon, P. & Burnstock, G. (1984). ATP as a co-transmitter in rat tail artery. *Eur. J. Pharmacol.* **106**, 149-152.
383. Saffrey, M.J. & Burnstock, G. (1984). Growth of myenteric plexus explant cultures in a serum free, hormone-supplemented culture medium. *Int. J. Dev. Neurosci.* **2**, 591-602.
384. Joseph, R., Dhital, K.K., Adams, J., Rose, F.C., Burnstock, G. & Appenzeller, O. (1984). Fluorescent histochemical studies of skin in cluster headache. In: *Proceedings of the Fifth International Migraine Symposium, London, Migraine Trust*. pp. 24-25.
385. Hassall, C.J.S. & Burnstock, G. (1984). Neuropeptide Y-like immunoreactivity in cultured intrinsic neurones of the heart. *Neurosci. Lett.* **52**, 111-115.
- *386. Burnstock, G. (1984). Autonomic neuroeffector mechanisms in smooth muscle. *Jap. J. Smooth Muscle Res.* **20**, 369-392.
- 386a. Pittam, B.S. & Burnstock, G. (1984). Actions of neuropeptides on intramural neurones cultured from guinea-pig urinary bladder. In: *Satellite Symposium of the 9th International Congress of Pharmacology, 1984. Electropharmacology of the in vitro synapse*. Ed. G.A. Cottrell, pp. 151.
- 386b. Burnstock, G. & Sneddon, P. (1984). Electrical events underlying contractile responses to sympathetic nerve stimulation in rat tail artery. *J. Physiol. (Lond.)* **357**, 130P.
387. Leake, L.D., Griffith, S.G. & Burnstock, G. (1985). 5-Hydroxytryptamine-like immunoreactivity in the peripheral and central nervous systems of the leech *Hirudo medicinalis*. *Cell Tissue Res.* **239**, 123-130.

388. Kennedy, C., Delbro, D. & Burnstock, G. (1985). P₂-purinoceptors mediate both vasodilation (via the endothelium) and vasoconstriction of the isolated rat femoral artery. *Eur. J. Pharmacol.* **107**, 161-168.
389. Crowe, R., Light, J.K., Chilton, C.P. & Burnstock, G. (1985). Vasoactive intestinal polypeptide (VIP)-immunoreactive nerve fibres associated with the striated muscle of the human external urethral sphincter [letter]. *Lancet* **i**, 47-48.
- *390. Burnstock, G. (1985). Purinergic mechanisms broaden their sphere of influence. *TiNS*. **8**, 5-6.
391. Burnstock, G. (1985). Citation Classic. "Purinergic Nerves", 1972. *Current Contents: Life Sciences* **28**, 18.
392. Crowe, R. & Burnstock, G. (1985). Perinatal development of adrenergic, cholinergic and non-adrenergic, non-cholinergic nerves and SIF cells in the rabbit urinary bladder. *Int. J. Dev. Neurosci.* **3**, 89-101.
393. Burnstock, G., Cusack, N.J. & Meldrum, L.A. (1985). Studies on the stereoselectivity of the P₂-purinoceptor on the guinea-pig vas deferens. *Br. J. Pharmacol.* **84**, 431-434.
394. Burnstock, G. & Sneddon, P. (1985). Evidence for ATP and noradrenaline as cotransmitters in sympathetic nerves. *Clin. Sci.* **68 (Suppl. 10)**, 89S-92S.
395. Burnstock, G. & Hoyle, C.H.V. (1985). Actions of adenine dinucleotides in the guinea-pig taenia coli: NAD acts indirectly on P₁-purinoceptors; NADP acts like a P₂-purinoceptor agonist. *Br. J. Pharmacol.* **84**, 825-831.
396. Meldrum, L.A. & Burnstock, G. (1985). Evidence that ATP is involved as a co-transmitter in the hypogastric nerve supplying the seminal vesicle of the guinea-pig. *Eur. J. Pharmacol.* **110**, 363-366.
397. Burnstock, G. & Hoyle, C.H.V. (1985). PACPX - a substituted xanthine - antagonizes both the A₁ and A₂ subclasses of the P₁-purinoceptor: antagonism of the A₂ subclass is competitive but antagonism of the A₁ subclass is not. *Br. J. Pharmacol.* **85**, 291-296.
398. Kennedy, C. & Burnstock, G. (1985). Evidence for two types of P₂-purinoceptor in longitudinal muscle of the rabbit portal vein. *Eur. J. Pharmacol.* **111**, 49-56.
- *399. Burnstock, G. (1985). Purinergic mechanisms: recent electrophysiological evidence. In: *Neurotransmitters in Action*. Ed. D. Bousfield, Elsevier Biomedical Press, Amsterdam. pp. 119-122.
400. Delbro, D., Hedlund, H., Kennedy, C. & Burnstock, G. (1985). Potent vasoconstrictor actions of α,β -methylene ATP, a stable analogue of ATP, on the rat vasculature, in vivo. *Acta Physiol. Scand.* **123**, 501-503.
401. Cowen, T., Haven, A.J. & Burnstock, G. (1985). Pontamine sky blue: a counterstain for background autofluorescence in fluorescence and immunofluorescence histochemistry. *Histochemistry* **82**, 205-208.

- *402. Burnstock, G. & Buckley, N. (1985). The classification of receptors for adenosine and adenine nucleotides. In: *Methods used in Adenosine Research. Methods in Pharmacology, Vol. 6*. Ed. D.M. Paton, Plenum Press, New York. pp. 193-212.
- *403. Burnstock, G. (1985). Neurohumoral control of blood vessels: some future directions. *J. Cardiovasc. Pharmacol.* **7**, S137-S146.
404. Loesch, A. & Burnstock, G. (1985). Ultrastructural identification of VIP-containing nerve fibres in the myenteric plexus of the rat ileum. *J. Neurocytol.* **14**, 327-335.
405. Kennedy, C. & Burnstock, G. (1985). ATP produces vasodilation via P1 purinoceptors and vasoconstriction via P2 purinoceptors in the isolated rabbit central ear artery. *Blood Vessels* **22**, 145-155.
- *406. Burnstock, G. (1985). Neurogenic control of cerebral circulation. *Cephalalgia Suppl.* **2**, 25-33.
407. Burnstock, G. (1985). Nervous control of smooth muscle by transmitters, cotransmitters and modulators. *Experientia* **41**, 869-874.
408. Parnavelas, J.G., Kelly, W. & Burnstock, G. (1985). Ultrastructural localization of choline acetyltransferase in vascular endothelial cells in rat brain. *Nature* **316**, 724-725.
409. Meldrum, L.A. & Burnstock, G. (1985). Investigations into the identity of the non-adrenergic, non-cholinergic excitatory transmitter in the smooth muscle of chicken rectum. *Comp. Biochem. Physiol.* **81C**, 307-309.
- *410. Burnstock, G. & Kennedy, C. (1985). Is there a basis for distinguishing two types of P2-purinoceptor? *Gen. Pharmacol.* **16**, 433-440.
411. Meldrum, L.A. & Burnstock, G. (1985). Evidence against VIP or substance P being the transmitter in non-cholinergic excitatory nerves supplying the guinea-pig bladder. *J. Pharm. Pharmacol.* **37**, 432-434.
412. Adams, D.J., Sanders, K.M. & Burnstock, G. (1985). Whole cell and single channel recording for guinea-pig cultured myenteric neurons. *Biophys. J.* **47**, 268a.
413. Hoyle, C.H.V. & Burnstock, G. (1985). Atropine-resistant excitatory junction potentials in rabbit bladder are blocked by α,β -methylene ATP. *Eur. J. Pharmacol.* **114**, 239-240.
414. Dhital, K., Steiner, T., Joseph, R., Clifford-Rose, F., Adams, J., Appenzeller, O. & Burnstock, G. (1985). Serotonergic immunofluorescent nerve fibres appear in human temple skin after lithium treatment [letter]. *Lancet* **ii**, 779.
415. Hanani, M. & Burnstock, G. (1985). Synaptic activity of myenteric neurons in tissue culture. *J. Auton. Nerv. Syst.* **14**, 49-60.
- *416. Burnstock, G. (1985). Purinergic transmitters and receptors: new directions. In: *Adenosine: Receptors and Modulation of Cell Function*. Eds. V. Stefanovich, K. Rudolphi & P. Schubert, IRL Press, Oxford. pp. 3-14.
417. Alafaci, C., Cowen, T., Crockard, H.A. & Burnstock, G. (1985). Origin and distribution of noradrenergic and NPY-containing nerves in cerebral blood vessels of the gerbil. *J. Cereb. Blood Flow Metab.* **5 (Suppl. 1)**, S543-S544.

418. Belai, A., Lincoln, J., Milner, P., Crowe, R., Loesch, A. & Burnstock, G. (1985). Enteric nerves in diabetic rats: increase in vasoactive intestinal polypeptide but not substance P. *Gastroenterology* **89**, 967-976.
419. Mathieson, J.J.I. & Burnstock, G. (1985). Purine-mediated relaxation and constriction of isolated rabbit mesenteric artery are not endothelium-dependent. *Eur. J. Pharmacol.* **118**, 221-229.
- *420. Joseph, R., Dhital, K., Adams, J., Burnstock, G., Appenzeller, O. & Clifford Rose, F. (1985). Cluster headache: a new approach using fluorescent histochemistry of nerves in temple skin. In: *Migraine. Proceedings of 5th International Migraine Symposium, London, 1984*. Ed. F. Clifford Rose, Karger, Basel. pp. 162-165.
421. Moss, H.E. & Burnstock, G. (1985). A comparative study of electrical field stimulation of the guinea-pig, ferret and marmoset urinary bladder. *Eur. J. Pharmacol.* **114**, 311-316.
422. Hanani, M. & Burnstock, G. (1985). The actions of substance P and serotonin on myenteric neurons in tissue culture. *Brain Res.* **358**, 276-281.
- 422a. Cowen, T. & Burnstock, G. (1985). Image analysis of catecholamine fluorescence and immunofluorescence in studies on blood vessel innervation. In: *Wenner-Gren International Symposium Series: Vol. 42. Quantitative Neuroanatomy in Transmitter Research*. Eds. L.F. Aquati & K. Fuxe, Macmillan, London. pp. 213-229.
- *423. Burnstock, G. (1986). The changing face of autonomic neurotransmission. (The First von Euler Lecture in Physiology). *Acta Physiol. Scand.* **126**, 67-91.
424. Leake, L.D., Crowe, R. & Burnstock, G. (1986). Localisation of substance P-, somatostatin-, vasoactive intestinal polypeptide- and met-enkephalin-immunoreactive nerves in the peripheral and central nervous systems of the leech (*Hirudo medicinalis*). *Cell Tissue Res.* **243**, 345-351.
425. Hassall, C.J.S. & Burnstock, G. (1986). Intrinsic neurones and associated cells of the guinea-pig heart in culture. *Brain Res.* **364**, 102-113.
426. Buckley, N.J. & Burnstock, G. (1986). Localization of muscarinic receptors on cultured myenteric neurons: a combined autoradiographic and immunocytochemical approach. *J. Neurosci.* **6**, 531-540.
427. Lincoln, J., Crowe, R., Bokor, J., Light, J.K., Chilton, C.P. & Burnstock, G. (1986). Adrenergic and cholinergic innervation of the smooth and striated muscle components of the urethra from patients with spinal cord injury. *J. Urol.* **135**, 402-408.
428. Crowe, R., Haven, A.J. & Burnstock, G. (1986). Intramural neurons of the guinea-pig urinary bladder: histochemical localization of putative neurotransmitters in cultures and newborn animals. *J. Auton. Nerv. Syst.* **15**, 319-339.
429. Dhital, K., Lincoln, J., Appenzeller, O. & Burnstock, G. (1986). Adrenergic innervation of vasa and nervi nervorum of optic, sciatic, vagus and sympathetic nerve trunks in normal and streptozotocin-diabetic rats. *Brain Res.* **367**, 39-44.

- *430. Burnstock, G. & Kennedy, C. (1986). A dual function for adenosine 5'-triphosphate in the regulation of vascular tone. Excitatory cotransmitter with noradrenaline from perivascular nerves and locally released inhibitory intravascular agent. *Circ. Res.* **58**, 319-330.
431. Kennedy, C., Saville, V.L. & Burnstock, G. (1986). The contributions of noradrenaline and ATP to the responses of the rabbit central ear artery to sympathetic nerve stimulation depend on the parameters of stimulation. *Eur. J. Pharmacol.* **122**, 291-300.
- *432. Burnstock, G. (1986). The non-adrenergic non-cholinergic nervous system. *Arch. Int. Pharmacodyn. Ther.* **280 (Suppl.)**, 1-15.
433. Alafaci, C., Cowen, T., Crockard, H.A. & Burnstock, G. (1986). Cerebral perivascular serotonergic fibres have a peripheral origin in the gerbil. *Brain Res. Bull.* **16**, 303-304.
- 433a. Burnstock, G., Mackenzie, I. & Manzini, S. (1986). Regulation of voltage-dependent calcium channels in the guinea-pig vas deferens by the dihydropyridines nifedipine and Bay K 8644. *J. Physiol. (Lond.)* **373**, 62P.
- *434. Burnstock, G. (1986). Non-adrenergic neurotransmitters in relation to sympathetic nervous control of the lower urinary tract. *Clin. Sci.* **70 (Suppl. 14)**, 15S-20S.
435. Dhall, U., Cowen, T., Haven, A.J. & Burnstock, G. (1986). Perivascular noradrenergic and peptide-containing nerves show different patterns of changes during development and ageing in the guinea-pig. *J. Auton. Nerv. Syst.* **16**, 109-126.
436. Kennedy, C. & Burnstock, G. (1986). ATP causes postjunctional potentiation of noradrenergic contractions in the portal vein of guinea-pig and rat. *J. Pharm. Pharmacol.* **38**, 307-309.
437. Buckley, N.J. & Burnstock, G. (1986). Autoradiographic localization of peripheral M₁ muscarinic receptors using [³H]pirenzepine. *Brain Res.* **375**, 83-91.
438. Loesch, A., Belai, A., Lincoln, J. & Burnstock, G. (1986). Enteric nerves in diabetic rats: electron microscopic evidence for neuropathy of vasoactive intestinal polypeptide-containing fibres. *Acta Neuropathol. (Berlin)* **70**, 161-168.
- *439. Burnstock, G. (1986). Autonomic neuromuscular junctions: current developments and future directions. The Third Anatomical Society Review Lecture. *J. Anat.* **146**, 1-30.
440. Kobayashi, Y., Hassall, C.J.S. & Burnstock, G. (1986). Culture of intramural cardiac ganglia of the newborn guinea-pig. I. Neuronal elements. *Cell Tissue Res.* **244**, 595-604.
441. Kobayashi, Y., Hassall, C.J.S. & Burnstock, G. (1986). Culture of intramural cardiac ganglia of the newborn guinea-pig. II. Non-neuronal elements. *Cell Tissue Res.* **244**, 605-612.
442. Hoyle, C.H.V. & Burnstock, G. (1986). Evidence that ATP is a neurotransmitter in the frog heart. *Eur. J. Pharmacol.* **124**, 285-289.

443. Fehér, E. & Burnstock, G. (1986). Ultrastructural localisation of substance P, vasoactive intestinal polypeptide, somatostatin and neuropeptide Y immunoreactivity in perivascular nerve plexuses of the gut. *Blood Vessels* **23**, 125-136.
444. Alafaci, C., Cowen, T., Crockard, H.A. & Burnstock, G. (1986). Noradrenergic innervation of gerbil large cerebral arteries. *Blood Vessels* **23**, 154-159.
445. Fehér, E., Burnstock, G., Varndell, I.M. & Polak, J.M. (1986). Calcitonin gene-related peptide-immunoreactive nerve fibres in the small intestine of the guinea-pig: electron-microscopic immunocytochemistry. *Cell Tissue Res.* **245**, 353-358.
446. Jones, R. & Burnstock, G. (1986). Effects of activity on restorative processes in the autonomic nervous system. In: *Electrical Stimulation and Neuromuscular Disorders*. Eds. W.A. Nix & G. Vrbová, Springer, Berlin. pp. 80-87.
- *447. Cowen, T. & Burnstock, G. (1986). Development, aging and plasticity of perivascular autonomic nerves. In: *Developmental Neurobiology of the Autonomic Nervous System*. Ed. P.M. Gootman, Humana Press, Clifton, NJ. pp. 211-232.
448. Manzini, S., Hoyle, C.H.V. & Burnstock, G. (1986). An electrophysiological analysis of the effect of Reactive Blue 2, a putative P₂-purinoceptor antagonist, on inhibitory junction potentials of rat caecum. *Eur. J. Pharmacol.* **127**, 197-204.
449. Crowe, R., Light, K., Chilton, C.P. & Burnstock, G. (1986). Vasoactive intestinal polypeptide-, somatostatin- and substance P-immunoreactive nerves in the smooth and striated muscle of the intrinsic external urethral sphincter of patients with spinal cord injury. *J. Urol.* **136**, 487-491.
- *450. Burnstock, G. (1986). Dynamic interaction between growing autonomic nerves and smooth muscle cells as demonstrated by time-lapse cinematography of tissue cultures. In: *Neural Regulation of Brain Circulation*. Eds. C. Owman & J.E. Hardebo, Elsevier, Amsterdam. pp. 561-568.
451. Hoyle, C.H.V., Moss, H.E. & Burnstock, G. (1986). Ethylcholine mustard aziridinium ion (AF64A) impairs cholinergic neuromuscular transmission in the guinea-pig ileum and urinary bladder, and cholinergic neuromodulation in the enteric nervous system of the guinea-pig distal colon. *Gen. Pharmacol.* **17**, 543-548.
452. Fehér, E. & Burnstock, G. (1986). Electron microscopic study of neuropeptide Y-containing nerve elements of the guinea pig small intestine. *Gastroenterology* **91**, 956-965.
453. Cowen, T., Alafaci, C., Crockard, H.A. & Burnstock, G. (1986). 5-HT-containing nerves to major cerebral arteries of the gerbil originate in the superior cervical ganglia. *Brain Res.* **384**, 51-59.
- *454. Burnstock, G. (1986). Neurotransmitters, neuromodulators and co-transmitters in the autonomic nervous system. *J. Auton. Nerv. Syst.* **Suppl.**, 319-330.
- *455. Burnstock, G. (1986). Purines as cotransmitters in adrenergic and cholinergic neurones. In: *Coexistence of Neuronal Messengers: A New Principle in Chemical Transmission. Progress in Brain Research, Vol. 68*. Eds. T. Hökfelt, K. Fuxe & B. Pernow, Elsevier, Amsterdam. pp. 193-203.

456. Alafaci, C., Cowen, T., Crockard, H.A. & Burnstock, G. (1986). Perivascular nerve types supplying cerebral blood vessels of the gerbil. *Acta Physiol. Scand.* **127** (Suppl. 552), 9-12.
- *457. Burnstock, G. & Kennedy, C. (1986). Purinergic receptors in the cardiovascular system. In: *Receptors in the Cardiovascular System. Progress in Pharmacology, Vol. 6, No. 2*. Eds. P.A. van Zwieten & E. Schönbaum, Gustav Fischer Verlag, Stuttgart. pp. 111-132.
458. Hoyle, C.H.V., Burnstock, G., Jass, J. & Lennard-Jones, J.E. (1986). Enkephalins inhibit non-adrenergic, non-cholinergic neuromuscular transmission in the human colon. *Eur. J. Pharmacol.* **131**, 159-160.
- 458a. Burnstock, G., Hopwood, A.M., Hoyle, C.H.V., Reilly, W.M., Saville, V.L., Stanley, M.D.A. & Warland, J.J.I. (1986). Reactive blue-2 selectively antagonises the relaxant responses to ATP and its analogues which are mediated by the P_{2Y} purinoceptor. *Br. J. Pharmacol.* **89**, 857P.
- 458b. Lincoln, J., Loesch, A. & Burnstock, G. (1986). Neuronal alterations in the hypothalamo-neurohypophysial complex in streptozotocin-diabetic rat. I. An electron microscopic study. *Xth Int. Congr. Neuropathol., Stockholm, Sweden 7-12 September 1986*, p105.
459. Burnstock, G. (1986). Purinergic receptors. In: *Discussions in Neurosciences, Vol. III, No. 3: Transduction of Neuronal Signals*. Eds. J.H. Magistretti, J.H. Morrison & T.D. Reisine, FESN, Geneva. pp. 48-55.
460. Burnstock, G. & Warland, J.J.I. (1987). A pharmacological study of the rabbit saphenous artery *in vitro*: a vessel with a large purinergic contractile response to sympathetic nerve stimulation. *Br. J. Pharmacol.* **90**, 111-120.
461. Burnstock, G. & Warland, J.J.I. (1987). P₂-purinoceptors of two subtypes in the rabbit mesenteric artery: reactive blue 2 selectively inhibits responses mediated via the P_{2Y}- but not the P_{2X}-purinoceptor. *Br. J. Pharmacol.* **90**, 383-391.
462. Pittam, B.S., Burnstock, G. & Purves, R.D. (1987). Urinary bladder intramural neurones: an electrophysiological study utilizing a tissue culture preparation. *Brain Res.* **403**, 267-278.
463. Hassall, C.J.S., Buckley, N.J. & Burnstock, G. (1987). Autoradiographic localisation of muscarinic receptors on guinea pig intracardiac neurones and atrial myocytes in culture. *Neurosci. Lett.* **74**, 145-150.
464. Hopwood, A.M. & Burnstock, G. (1987). ATP mediates coronary vasoconstriction via P_{2X}-purinoceptors and coronary vasodilatation via P_{2Y}-purinoceptors in the isolated perfused rat heart. *Eur. J. Pharmacol.* **136**, 49-54.
465. Belai, A. & Burnstock, G. (1987). Selective damage of intrinsic calcitonin gene-related peptide-like immunoreactive enteric nerve fibers in streptozotocin-induced diabetic rats. *Gastroenterology* **92**, 730-734.
- *466. Burnstock, G. (1987). Therapeutic aspects of stimulating or blocking adenosine (P₁-) and ATP (P₂-) purinoceptors. In: *Trends in Medicinal Chemistry*. Eds. E. Mutschler & E. Winterfeldt, VCH Verlagsgesellschaft, Weinheim. pp. 369-382.

467. Travo, P., Bodin, P., Burnstock, G. & Stoclet, J.-C. (1987). Quantitative method for the study of the morphological changes induced by vasoactive agents in single aortic myocytes grown in primary cultures. *Lab. Invest.* **56**, 335-343.
468. Houston, D.A., Burnstock, G. & Vanhoutte, P.M. (1987). Different P₂-purinergic receptor subtypes of endothelium and smooth muscle in canine blood vessels. *J. Pharmacol. Exp. Ther.* **241**, 501-506.
469. Allen, T.G.J. & Burnstock, G. (1987). Intracellular studies of the electrophysiological properties of cultured intracardiac neurones of the guinea-pig. *J. Physiol. (Lond.)* **388**, 349-366.
470. Kirkpatrick, K. & Burnstock, G. (1987). Sympathetic nerve-mediated release of ATP from the guinea-pig vas deferens is unaffected by reserpine. *Eur. J. Pharmacol.* **138**, 207-214.
- *471. Burnstock, G. (1987). Local control of blood pressure by purines. *Blood Vessels* **24**, 156-160.
472. Lincoln, J., Crowe, R., Blacklay, P.F., Pryor, J.P., Lumley, J.S.P. & Burnstock, G. (1987). Changes in the VIPergic, cholinergic and adrenergic innervation of human penile tissue in diabetic and non-diabetic impotent males. *J. Urol.* **137**, 1053-1059.
473. Fehér, E. & Burnstock, G. (1987). Ultrastructural identification of vasoactive intestinal polypeptide- and neuropeptide Y-containing nerve fibres in the vas deferens of the guinea-pig. *J. Auton. Nerv. Syst.* **19**, 235-242.
474. Reilly, W.M. & Burnstock, G. (1987). The effect of ATP analogues on the spontaneous electrical and mechanical activity of rat portal vein longitudinal muscle. *Eur. J. Pharmacol.* **138**, 319-325.
475. Lagnado, M.L.J., Crowe, R., Lincoln, J. & Burnstock, G. (1987). Reduction of nerves containing vasoactive intestinal polypeptide and serotonin, but not neuropeptide Y and catecholamine, in cerebral blood vessels of the 8-week streptozotocin-induced diabetic rat. *Blood Vessels* **24**, 169-180.
476. Reilly, W.M., Hoyle, C.H.V. & Burnstock, G. (1987). Pre- and postjunctional adrenoceptor types in the circular muscle of the guinea-pig caecum. *Naunyn Schmiedebergs Arch. Pharmacol.* **336**, 37-47.
477. Reilly, W.M., Saville, V.L. & Burnstock, G. (1987). An assessment of the antagonistic activity of reactive blue 2 at P₁- and P₂-purinoceptors: supporting evidence for purinergic innervation of the rabbit portal vein. *Eur. J. Pharmacol.* **140**, 47-53.
478. Cowen, T., Alafaci, C., Crockard, H.A. & Burnstock, G. (1987). Origin and postnatal development of nerves showing 5-hydroxytryptamine-like immunoreactivity supplying major cerebral arteries of the rat. *Neurosci. Lett.* **78**, 121-126.
479. Cook, R.D. & Burnstock, G. (1987). Citation Classic. "The ultrastructure of Auerbach's plexus in the guinea-pig. I. Neuronal elements", 1976. *Current Contents: Life Sciences* **30**, 14.
480. Hassall, C.J.S. & Burnstock, G. (1987). Evidence for uptake and synthesis of 5-hydroxytryptamine by a subpopulation of intrinsic neurons in the guinea-pig heart. *Neuroscience* **22**, 413-423.

- *481. Burnstock, G. (1987). Adenosine triphosphate as a neurotransmitter. In: *Encyclopedia of Neuroscience, Vol. I*. Ed. G. Adelman, Birkhaeuser, Boston. p. 11.
- *482. Burnstock, G. (1987). Purinergic nervous system. In: *Encyclopedia of Neuroscience, Vol. II*. Ed. G. Adelman, Birkhaeuser, Boston. pp. 1015-1017.
483. Crowe, R., Milner, P., Lincoln, J. & Burnstock, G. (1987). Histochemical and biochemical investigation of adrenergic, cholinergic and peptidergic innervation of the rat ventral prostate 8 weeks after streptozotocin-induced diabetes. *J. Auton. Nerv. Syst.* **20**, 103-112.
484. Hassall, C.J.S. & Burnstock, G. (1987). Immunocytochemical localisation of neuropeptide Y and 5-hydroxytryptamine in a subpopulation of amine-handling intracardiac neurones that do not contain dopamine β -hydroxylase in tissue culture. *Brain Res.* **422**, 74-82.
485. Belai, A., Ralevic, V. & Burnstock, G. (1987). VIP release from enteric nerves is independent of extracellular calcium. *Regul. Pept.* **19**, 79-89.
- *486. Burnstock, G., Allen, T.G.J., Hassall, C.J.S. & Pittam, B.S. (1987). Properties of intramural neurones cultured from the heart and bladder. In: *Histochemistry and Cell Biology of Autonomic Neurons and Paraganglia. Exp. Brain Res. Ser. 16*. Ed. C. Heym, Springer Verlag, Heidelberg. pp. 323-328.
487. Delbro, D. & Burnstock, G. (1987). Depressor and pressor actions of purine nucleosides and nucleotides in the anaesthetized rat. *Acta Physiol. Scand.* **130**, 373-380.
488. James, S., Hoyle, C.H.V., Burnstock, G., Jass, J.R., Jeffrey, I.J.M. & Lennard-Jones, J.E. (1987). Autoradiographic localization of δ -opioid binding sites in human sigmoid colon. *Eur. J. Pharmacol.* **142**, 185-186.
489. Dhital, K.K. & Burnstock, G. (1987). Contrôle neurogène adrénérique et non-adrénérique de la paroi artérielle. In: *Les Maladies de la Paroi Artérielle*. Eds. J.-P. Camilleri, C.L. Berry, J.-N. Fiessinger & J. Bariéty, Flammarion, Paris. pp. 77-105.
490. Hamid, Q., Wharton, J., Terenghi, G., Hassall, C.J.S., Aimi, J., Taylor, K.M., Nakazato, H., Dixon, J.E., Burnstock, G. & Polak, J.M. (1987). Localization of atrial natriuretic peptide mRNA and immunoreactivity in the rat heart and human atrial appendage. *Proc. Natl. Acad. Sci. USA.* **84**, 6760-6764.
491. Milner, P., Crowe, R., Burnstock, G. & Light, J.K. (1987). Neuropeptide Y- and vasoactive intestinal polypeptide-containing nerves in the intrinsic external urethral sphincter in the areflexic bladder compared to detrusor-sphincter dyssynergia in patients with spinal cord injury. *J. Urol.* **138**, 888-892.
492. Warland, J.J.I. & Burnstock, G. (1987). Effects of reserpine and 6-hydroxydopamine on the adrenergic and purinergic components of sympathetic nerve responses of the rabbit saphenous artery. *Br. J. Pharmacol.* **92**, 871-880.
- *493. Burnstock, G. (1987). Present status of purinergic neurotransmission - implications for vascular control. In: *Fernström Foundation Series, No. 10: Neuronal Messengers in Vascular Function*. Eds. A. Nobin, C. Owman & B. Arneklo-Nobin, Elsevier, Amsterdam. pp. 327-340.

494. Belai, A., Lincoln, J. & Burnstock, G. (1987). Lack of release of vasoactive intestinal polypeptide and calcitonin gene-related peptide during electrical stimulation of enteric nerves in streptozotocin-diabetic rats. *Gastroenterology* **93**, 1034-1040.
- *495. Burnstock, G. (1987). Dual control of blood pressure by purines. In: *Pharmacology. Proceedings of the Xth International Congress of Pharmacology*. Eds. M.J. Rand & C. Raper, Elsevier, Amsterdam. pp. 245-254.
- *496. Burnstock, G. (1987). Mechanisms of interaction of peptide and nonpeptide vascular neurotransmitter systems. *J. Cardiovasc. Pharmacol.* **10 (Suppl. 12)**, S74-S81.
497. Moss, H.E., Crowe, R. & Burnstock, G. (1987). The seminal vesicle in eight and 16 week streptozotocin-induced diabetic rats: adrenergic, cholinergic and peptidergic innervation. *J. Urol.* **138**, 1273-1278.
498. Moss, H.E., Lincoln, J. & Burnstock, G. (1987). A study of bladder dysfunction during streptozotocin-induced diabetes in the rat using an in vitro whole bladder preparation. *J. Urol.* **138**, 1279-1284.
499. Alafaci, C., Tomasello, F. & Burnstock, G. (1987). Histochemical and immunohistochemical study of noradrenergic, serotonergic and peptidergic innervation of the cerebral circulation. *Funct. Neurol.* **2**, 417-420.
- *500. Burnstock, G. (1987). Autonomic neuroeffector mechanisms: recent developments. *Funct. Neurol.* **2**, 427-436.
501. Burnstock, G., Allen, T.G.J. & Hassall, C.J.S. (1987). The electrophysiologic and neurochemical properties of paratracheal neurones in situ and in dissociated cell culture. *Am. Rev. Respir. Dis.* **136**, S23-S26.
502. Hassall, C.J.S., Wharton, J., Gulbenkian, S., Anderson, J.V., Frater, J., Bailey, D.J., Merighi, A., Bloom, S.R., Polak, J.M. & Burnstock, G. (1988). Ventricular and atrial myocytes of newborn rats synthesise and secrete atrial natriuretic peptide in culture: Light- and electron-microscopical localisation and chromatographic examination of stored and secreted molecular forms. *Cell Tissue Res.* **251**, 161-169.
503. Loesch, A., Lincoln, J. & Burnstock, G. (1988). The hypothalamo-neurohypophysial system in streptozotocin-diabetic rats: ultrastructural and immunocytochemical evidence for alterations of oxytocin- and vasopressin-containing neuronal profiles. *Acta Neuropathol. (Berl.)* **75**, 391-401.
504. Dhall, U., Cowen, T., Haven, A.J. & Burnstock, G. (1988). Effect of oestrogen and progesterone on noradrenergic nerves and on nerves showing serotonin-like immunoreactivity in the basilar artery of the rabbit. *Brain Res.* **442**, 335-339.
505. Jackowski, A., Crockard, A. & Burnstock, G. (1988). Ultrastructure of serotonin-containing nerve fibres in the middle cerebral artery of the rat and evidence for its localization within catecholamine-containing nerve fibres by immunoelectron microscopy. *Brain Res.* **443**, 159-165.
506. Kasakov, L., Ellis, J., Kirkpatrick, K., Milner, P. & Burnstock, G. (1988). Direct evidence for concomitant release of noradrenaline, adenosine 5'-triphosphate and

neuropeptide Y from sympathetic nerve supplying the guinea-pig vas deferens. *J. Auton. Nerv. Syst.* **22**, 75-82.

507. Dhital, K.K., Gerli, R., Lincoln, J., Milner, P., Tanganelli, P., Weber, G., Fruschelli, C. & Burnstock, G. (1988). Increased density of perivascular nerves to the major cerebral vessels of the spontaneously hypertensive rat: differential changes in noradrenaline and neuropeptide Y during development. *Brain Res.* **444**, 33-45.
- *508. Burnstock, G. (1988). Autonomic neural control mechanisms. With special reference to the airways. In: *The Airways. Neural Control in Health and Disease*. Eds. M.A. Kaliner & P.J. Barnes, Marcel Dekker, New York. pp. 1-22.
509. Buckley, N.J., Saffrey, M.J., Hassall, C.J.S. & Burnstock, G. (1988). Localization of muscarinic receptors on peptide-containing neurones of the guinea pig myenteric plexus in tissue culture. *Brain Res.* **445**, 152-156.
- *510. Burnstock, G. (1988). Sympathetic purinergic transmission in small blood vessels. *Trends Pharmacol. Sci.* **9**, 116-117.
511. Mione, M.C., Cavallotti, C., Burnstock, G. & Amenta, F. (1988). The peptidergic innervation of the guinea pig uterine artery in pregnancy. *Basic Appl. Histochem.* **32**, 153-159.
512. Loesch, A. & Burnstock, G. (1988). Ultrastructural localisation of serotonin and substance P in vascular endothelial cells of rat femoral and mesenteric arteries. *Anat. Embryol.* **178**, 137-142.
513. Mackenzie, I., Kirkpatrick, K.A. & Burnstock, G. (1988). Comparative study of the actions of AP₅A and α,β -methylene ATP on nonadrenergic, noncholinergic neurogenic excitation in the guinea-pig vas deferens. *Br. J. Pharmacol.* **94**, 699-706.
- *514. Burnstock, G. (1988). Regulation of local blood flow by neurohumoral substances released from perivascular nerves and endothelial cells. *Acta Physiol. Scand.* **133** (Suppl. 571), 53-59.
515. Saffrey, M.J. & Burnstock, G. (1988). Distribution of peptide-immunoreactive nerves in the foetal and newborn guinea-pig caecum. *Cell Tissue Res.* **253**, 105-114.
516. Hoyle, C.H.V., Reilly, W.M., Lincoln, J. & Burnstock, G. (1988). Adrenergic, but not cholinergic or purinergic, responses are potentiated in the cecum of diabetic rats. *Gastroenterology* **94**, 1357-1367.
- *517. Burnstock, G. & Griffith, S.G.(Eds.). (1988). *Nonadrenergic Innervation of Blood Vessels, Vols.I (pp. 1-149) and II (pp. 1-233)*. CRC Press, Boca Raton, FL.
- *518. Burnstock, G. (1988). Nonadrenergic innervation of blood vessels - some historical perspectives and future directions. In: *Nonadrenergic Innervation of Blood Vessels, Vol. I*. Eds. G. Burnstock & S.G. Griffith, CRC Press, Boca Raton, FL. pp. 1-14.
- *519. Alafaci, C., Dhital, K.K. & Burnstock, G. (1988). Purinergic mechanisms in cerebral circulation. In: *Basic Mechanisms of Headache*. Eds. J. Olesen & L. Edvinsson, Elsevier, Amsterdam. pp. 163-176.

520. Franco, R., Hoyle, C.H.V., Centelles, J.J. & Burnstock, G. (1988). Degradation of adenosine by extracellular adenosine deaminase in the rat duodenum. *Gen. Pharmacol.* **19**, 679-681.
521. James, S. & Burnstock, G. (1988). Autoradiographic localization of binding sites for ^{125}I -substance P on neurones from cultured rat superior cervical ganglion. *Brain Res.* **458**, 205-211.
- *522. Burnstock, G. (1988). Local purinergic regulation of blood pressure. (The First John T. Shepherd Lecture). In: *Vasodilatation: Vascular Smooth Muscle, Peptides, Autonomic Nerves, and Endothelium*. Ed. P.M. Vanhoutte, Raven Press, New York. pp. 1-14.
523. Burnstock, G., Lincoln, J., Fehér, E., Hopwood, A.M., Kirkpatrick, K., Milner, P. & Ralevic, V. (1988). Serotonin is localized in endothelial cells of coronary arteries and released during hypoxia: a possible new mechanism for hypoxia-induced vasodilatation of the rat heart. *Experientia* **44**, 705-707.
- 523a. Aberdeen, J., Corr, L., Milner, P., Lincoln, J. & Burnstock, G. (1988). Increases in calcitonin gene-related peptide (CGRP) after guanethidine sympathectomy in the rat. *Regul. Pept.* **22**, 387.
- 523b. Ralevic, V., Milner, P., Hudlická, O., Kristek, F. & Burnstock, G. (1988). Shear stress causes release of substance P from rat hindlimb vascular endothelial cells. *Regul. Pept.* **22**, 427.
524. Crowe, R., Burnstock, G. & Light, J.K. (1988). Intramural ganglia in the human urethra. *J. Urol.* **140**, 183-187.
525. Mione, M.C., Dhital, K.K., Amenta, F. & Burnstock, G. (1988). An increase in the expression of neuropeptidergic vasodilator, but not vasoconstrictor, cerebrovascular nerves in aging rats. *Brain Res.* **460**, 103-113.
526. Fehér, E. & Burnstock, G. (1988). Galanin-like immunoreactive nerve elements in the small intestine of the rat. An electron microscopic immunocytochemical study. *Neurosci. Lett.* **92**, 137-142.
527. Hoyle, C.H.V., Vladimirova, I.A. & Burnstock, G. (1988). Pre- and postjunctional actions of purine and xanthine compounds in the guinea-pig caecum circular muscle. *Br. J. Pharmacol.* **95**, 653-663.
528. Ralevic, V. & Burnstock, G. (1988). Actions mediated by P_2 -purinoceptor subtypes in the isolated perfused mesenteric bed of the rat. *Br. J. Pharmacol.* **95**, 637-645.
529. Saffrey, M.J. & Burnstock, G. (1988). Peptide-containing neurons in explant cultures of guinea-pig myenteric plexus during development in vitro: gross morphology and growth patterns. *Cell Tissue Res.* **254**, 167-176.
530. Mackenzie, I., Manzini, S. & Burnstock, G. (1988). Regulation of voltage-dependent excitatory responses to α,β -methylene ATP, ATP and non-adrenergic nerve stimulation by dihydropyridines in the guinea-pig vas deferens. *Neuroscience* **27**, 317-332.
531. Belai, A. & Burnstock, G. (1988). Release of calcitonin gene-related peptide from rat enteric nerves is Ca^{2+} -dependent but is not induced by K^+ depolarization. *Regul. Pept.* **23**, 227-235.

532. James, S. & Burnstock, G. (1988). Neuropeptide Y-like immunoreactivity in intramural ganglia of the newborn guinea pig urinary bladder. *Regul. Pept.* **23**, 237-245.
533. Crowe, R. & Burnstock, G. (1988). An increase of vasoactive intestinal polypeptide-, but not neuropeptide Y-, substance P- or catecholamine-containing nerves in the iris of the streptozotocin-induced diabetic rat. *Exp. Eye Res.* **47**, 751-759.
534. Saville, V.L. & Burnstock, G. (1988). Use of reserpine and 6-hydroxydopamine supports evidence for purinergic cotransmission in the rabbit ear artery. *Eur. J. Pharmacol.* **155**, 271-277.
535. Burnstock, G., Mirsky, R. & Belai, A. (1988). Reversal of nerve damage in streptozotocin-diabetic rats by acute application of insulin *in vitro*. *Clin. Sci.* **75**, 629-635.
536. Belai, A., Lincoln, J., Milner, P. & Burnstock, G. (1988). Progressive changes in adrenergic, serotonergic, and peptidergic nerves in proximal colon of streptozotocin-diabetic rats. *Gastroenterology* **95**, 1234-1241.
537. Cowen, T., Haven, A.J., Milner, P., Lincoln, J. & Burnstock, G. (1988). Increase in neuropeptide Y, but not noradrenaline, in the superior cervical ganglion of rabbits chronically exposed to cold. *J. Auton. Nerv. Syst.* **24**, 175-178.
538. Crowe, R., Burnstock, G. & Light, J.K. (1988). Spinal cord lesions at different levels affect either the adrenergic or vasoactive intestinal polypeptide-immunoreactive nerves in the human urethra. *J. Urol.* **140**, 1412-1414.
- 538a. Burnstock, G. (1988). Adenosine: recognition of physiological importance. *Proceedings of 1st Cardiothoracic Institute Workshop, 30 March 1988*, Cardiothoracic Institute, Brompton Hospital, London. *Postgrad. Med. J.* **64**, 823.
539. Vizi, E.S. & Burnstock, G. (1988). Origin of ATP release in the rat vas deferens: concomitant measurement of [³H]noradrenaline and [¹⁴C]ATP. *Eur. J. Pharmacol.* **158**, 69-77.
- *540. Burnstock, G., Alafaci, C. & Dhital, K.K. (1988). Neural transmitters in the cerebrovascular bed. In: *Cerebral Circulation and Neurotransmitters: from Basic to Clinical Sciences. VIII International Symposium on Morphological Sciences*. Eds. C. Cavallotti & L. Fumagalli, Edizioni Universitarie Romane, Rome. pp. 7-26.
- *541. Hassall, C.J.S., Allen, T.G.J., Pittam, B.S. & Burnstock, G. (1989). The use of cell and tissue culture techniques in the study of regulatory peptides. In: *Regulatory Peptides. Experientia Suppl.* Ed. J.M. Polak, Birkhäuser, Basel. pp. 113-116.
542. Reilly, W.M., Saville, V.L. & Burnstock, G. (1989). Vessel reactivity and prejunctional modulatory changes in the portal vein of mature spontaneously hypertensive rats. *Eur. J. Pharmacol.* **160**, 283-289.
543. Milner, P., Ralevic, V., Hopwood, A.M., Fehér, E., Lincoln, J., Kirkpatrick, K.A. & Burnstock, G. (1989). Ultrastructural localisation of substance P and choline acetyltransferase in endothelial cells of rat coronary artery and release of substance P and acetylcholine during hypoxia. *Experientia* **45**, 121-125.

544. Crowe, R., Burnstock, G. & Light, J.K. (1989). Adrenergic innervation of the striated muscle of the intrinsic external urethral sphincter from patients with lower motor spinal cord lesion. *J. Urol.* **141**, 47-49.
545. Crowe, R. & Burnstock, G. (1989). A histochemical and immunohistochemical study of the autonomic innervation of the lower urinary tract of the female pig. Is the pig a good model for the human bladder and urethra. *J. Urol.* **141**, 414-422.
546. Jackowski, A., Crockard, A. & Burnstock, G. (1989). 5-Hydroxytryptamine demonstrated immunohistochemically in rat cerebrovascular nerves largely represents 5-hydroxytryptamine uptake into sympathetic nerve fibres. *Neuroscience* **29**, 453-462.
- *547. Dhital, K.K. & Burnstock, G. (1989). Adrenergic and non-adrenergic neural control of the arterial wall. In: *Diseases of the Arterial Wall*. Eds. J.-P. Camilleri, C.L. Berry, J.-N. Fiessinger & J. Bariéty, Springer, London. pp. 97-126.
548. Jackowski, A., Crockard, A., Burnstock, G. & Lincoln, J. (1989). Alterations in serotonin and neuropeptide Y content of cerebrovascular sympathetic nerves following experimental subarachnoid hemorrhage. *J. Cereb. Blood Flow Metab.* **9**, 271-279.
549. Ralevic, V., Kristek, F., Hudlická, O. & Burnstock, G. (1989). A new protocol for removal of the endothelium from the perfused rat hind-limb preparation. *Circ. Res.* **64**, 1190-1196.
- 549a. Cavanagh, J.F.R., Mione, M.C. & Burnstock, G. (1989). Colocalization of NPY and VIP in the cerebrovascular nerves originating from the pterygopalatine ganglion in the rat. *J. Cereb. Blood Flow Metab.* **9 (Suppl. 1)**, S34.
- 549b. Alafaci, C., Fehér, E., Crockard, H.A. & Burnstock, G. (1989). Appearance of serotonin immunoreactivity in Schwann cells of gerbil cerebral arteries following sympathetic denervation. *J. Cereb. Blood Flow Metab.* **9 (Suppl 1)**, S244.
- 549c. Jackowski, A., Crockard, H.A. & Burnstock, G. (1989). Experimental subarachnoid haemorrhage: temporal changes in NPY and 5-HT levels within cerebrovascular sympathetics. *J. Cereb. Blood Flow Metab.* **9 (Suppl 1)**, S371.
550. Hopwood, A.M., Lincoln, J., Kirkpatrick, K.A. & Burnstock, G. (1989). Adenosine 5'-triphosphate, adenosine and endothelium-derived relaxing factor in hypoxic vasodilatation of the heart. *Eur. J. Pharmacol.* **165**, 323-326.
- *551. Hoyle, C.H.V. & Burnstock, G. (1989). Neuromuscular transmission in the gastrointestinal tract. In: *Handbook of Physiology, Section 6: The Gastrointestinal System, Vol. I: Motility and Circulation*. Ed. J.D. Wood, American Physiological Society, Bethesda, MD. pp. 435-464.
552. Ellis, J.L. & Burnstock, G. (1989). Angiotensin neuromodulation of adrenergic and purinergic co-transmission in the guinea-pig vas deferens. *Br. J. Pharmacol.* **97**, 1157-1164.
553. Stewart-Lee, A.L. & Burnstock, G. (1989). Actions of tachykinins on the rabbit mesenteric artery: substance P and [Glp⁶,L-Pro⁹]SP₆₋₁₁ are potent agonists for endothelial neurokinin-1 receptors. *Br. J. Pharmacol.* **97**, 1218-1224.

554. Chapple, C.R., Aubry, M.L., James, S., Greengrass, P.M., Burnstock, G., Turner-Warwick, R.T., Milroy, E.J.G. & Davey, M.J. (1989). Characterisation of human prostatic adrenoceptors using pharmacology receptor binding and localisation. *Br. J. Urol.* **63**, 487-496.
- 554a. Lincoln, J., Crowe, R., Burnstock, G., Kamm, M. & Lennard-Jones, J.E. (1989). Serotonin, but not noradrenaline, levels are increased in the circular muscle and mucosa of the sigmoid colon from patients with severe idiopathic constipation. *J. Auton. Nerv. Syst.* **27**, 87.
- *555. Burnstock, G. (1989). Purine receptors. In: *Adenosine Receptors in the Nervous System*. Ed. J.A. Ribeiro, Taylor & Francis, London. pp. 1-14.
556. Lincoln, J., Loesch, A. & Burnstock, G. (1989). The hypothalamo-neurohypophysial system in streptozotocin-diabetic rats. Ultrastructural evidence for neuronal alterations in the supraoptic and paraventricular nuclei and in the neurohypophysis. *J. Hirnforsch.* **30**, 425-435.
557. Ellis, J.L. & Burnstock, G. (1989). Modulation of neurotransmission in the guinea-pig vas deferens by capsaicin: involvement of calcitonin gene-related peptide and substance P. *Br. J. Pharmacol.* **98**, 707-713.
558. Dhall, U. & Burnstock, G. (1989). Distribution of serotonin-like immunoreactive nerves in major cerebral arteries of rabbit: an immunohistochemical study. *J. Histochem. Cytochem.* **37**, 1383-1386.
559. James, S. & Burnstock, G. (1989). Autoradiographic localization of muscarinic receptors on cultured, peptide-containing neurones from newborn rat superior cervical ganglion. *Brain Res.* **498**, 205-214.
560. James, S., Chapple, C.R., Phillips, M.I., Greengrass, P.M., Davey, M.J., Turner-Warwick, R.T., Milroy, E.J.G. & Burnstock, G. (1989). Autoradiographic analysis of alpha-adrenoceptors and muscarinic cholinergic receptors in the hyperplastic human prostate. *J. Urol.* **142**, 438-444.
561. Fehér, E. & Burnstock, G. (1989). Occurrence of FMRF amide-like immunoreactive nerve fibers in guinea pig small intestine. *J. Histochem. Cytochem.* **37**, 1427-1433.
562. Hoyle, C.H.V. & Burnstock, G. (1989). Neuronal populations in the submucous plexus of the human colon. *J. Anat.* **166**, 7-22.
563. Hoyle, C.H.V. & Burnstock, G. (1989). Galanin-like immunoreactivity in enteric neurons of the human colon. *J. Anat.* **166**, 23-33.
564. Jackowski, A., Crockard, A., Ross-Russell, R. & Burnstock, G. (1989). Serial determinations of regional cerebral blood flow in the rat using simple chronically implanted platinum wire microelectrodes. *J. Neurosci. Methods* **30**, 133-139.
565. James, S. & Burnstock, G. (1989). Localization of muscarinic receptors on somatostatin-like immunoreactive neurones of the newborn guinea pig urinary bladder in culture. *Neurosci. Lett.* **106**, 13-18.
566. Moss, H.E., Tansey, E.M. & Burnstock, G. (1989). Abnormalities of responses to autonomic stimulation in the mouse urinary bladder associated with Semliki Forest virus-induced demyelination. *J. Urol.* **142**, 850-854.

567. Bo, X. & Burnstock, G. (1989). [³H]- α,β -methylene ATP, a radioligand labelling P₂-purinoceptors. *J. Auton. Nerv. Syst.* **28**, 85-88.
568. Fehér, E., Görcs, T. & Burnstock, G. (1989). Somatostatin-immunoreactive nerve fibers in close association with capillaries in the small intestine. *Peptides* **10**, 945-949.
- *569. Burnstock, G. (1989). Vascular control by purines with emphasis on the coronary system. *Eur. Heart J.* **10 (Suppl. F)**, 15-21.
570. Hoyle, C.H.V., Chapple, C. & Burnstock, G. (1989). Isolated human bladder: evidence for an adenine dinucleotide acting on P_{2X}-purinoceptors and for purinergic transmission. *Eur. J. Pharmacol.* **174**, 115-118.
571. Hoyle, C.H.V., Knight, G.E. & Burnstock, G. (1989). Actions of adenylyl compounds in the pedal disc of the cnidarian *Actinia equina*. *Comp. Biochem. Physiol.* **94C**, 111-114.
- *572. Burnstock, G., Dhital, K.K. & Alafaci, C. (1989). Structural and chemical organization of the autonomic neuroeffector system. In: *Autonomic Neuropathies. New Issues in Neurosciences I*. Ed. P.K. Thomas, pp. 277-289.
- *573. Burnstock, G. (1989). The role of adenosine triphosphate in migraine. *Biomed. Pharmacother.* **43**, 727-736.
574. Ellis, J.L., Kasakov, L., Vlaskovska, M. & Burnstock, G. (1990). Prejunctional α_1 -adrenoceptors modify release of [³H]noradrenaline in the guinea-pig vas deferens. *Gen. Pharmacol.* **21**, 53-57.
575. James, S., Hassall, C.J.S., Polak, J.M. & Burnstock, G. (1990). Visualisation of specific binding sites for atrial natriuretic peptide on non-neuronal cells of cultured rat sympathetic ganglia. *Cell Tissue Res.* **259**, 129-137.
576. Ralevic, V. & Burnstock, G. (1990). Postjunctional synergism of noradrenaline and adenosine 5'-triphosphate in the mesenteric arterial bed of the rat. *Eur. J. Pharmacol.* **175**, 291-299.
- *577. Mione, M.C., Ralevic, V. & Burnstock, G. (1990). Peptides and vasomotor mechanisms. *Pharmacol. Ther.* **46**, 429-468.
578. Lincoln, J., Loesch, A. & Burnstock, G. (1990). Localization of vasopressin, serotonin and angiotensin II in endothelial cells of the renal and mesenteric arteries of the rat. *Cell Tissue Res.* **259**, 341-344.
579. Saville, V.L., Maynard, K.I. & Burnstock, G. (1990). Neuropeptide Y potentiates purinergic as well as adrenergic responses of the rabbit ear artery. *Eur. J. Pharmacol.* **176**, 117-125.
580. Belai, A., Dale, M.M. & Burnstock, G. (1990). Enhancement of A23187-induced release of enteric vasoactive intestinal polypeptide by phorbol 12,13-dibutyrate. *Eur. J. Pharmacol.* **177**, 103-105.
581. Hoyle, C.H.V., Knight, G.E. & Burnstock, G. (1990). Suramin antagonizes responses to P₂-purinoceptor agonists and purinergic nerve stimulation in the guinea-pig urinary bladder and taenia coli. *Br. J. Pharmacol.* **99**, 617-621.

582. Allen, T.G.J. & Burnstock, G. (1990). M₁ and M₂ muscarinic receptors mediate excitation and inhibition of guinea-pig intracardiac neurones in culture. *J. Physiol. (Lond.)* **422**, 463-480.
583. Carlisle, L., Aberdeen, J., Forge, A. & Burnstock, G. (1990). Neural basis for regulation of cochlear blood flow: Peptidergic and adrenergic innervation of the spiral modiolar artery of the guinea pig. *Hear. Res.* **43**, 107-114.
584. Mione, M.C., Cavanagh, J.F.R., Lincoln, J., Milner, P. & Burnstock, G. (1990). Long-term chemical sympathectomy leads to an increase of neuropeptide Y immunoreactivity in cerebrovascular nerves and iris of the developing rat. *Neuroscience* **34**, 369-378.
585. Mione, M.C., Cavanagh, J.F.R., Lincoln, J., Milner, P. & Burnstock, G. (1990). Pregnancy reduces noradrenaline but not neuropeptide levels in the uterine artery of the guinea-pig. *Cell Tissue Res.* **259**, 503-509.
586. Brizzolara, A.L. & Burnstock, G. (1990). Evidence for noradrenergic-purinergic cotransmission in the hepatic artery of the rabbit. *Br. J. Pharmacol.* **99**, 835-839.
587. Allen, T.G.J. & Burnstock, G. (1990). A voltage-clamp study of the electrophysiological characteristics of the intramural neurones of the rat trachea. *J. Physiol. (Lond.)* **423**, 593-614.
588. James, S., Bailey, D.J. & Burnstock, G. (1990). Autoradiographic visualization of muscarinic receptors on rat paratracheal neurones in dissociated cell culture. *Brain Res.* **513**, 74-80.
589. Aberdeen, J., Corr, L., Milner, P., Lincoln, J. & Burnstock, G. (1990). Marked increases in calcitonin gene-related peptide-containing nerves in the developing rat following long-term sympathectomy with guanethidine. *Neuroscience* **35**, 175-184.
590. Lincoln, J., Crowe, R., Burnstock, G., Kamm, M.A. & Lennard-Jones, J.E. (1990). Serotonin and 5-hydroxyindoleacetic acid are increased in the sigmoid colon in severe idiopathic constipation. *Gastroenterology* **98**, 1219-1225.
591. Lefebvre, R.A. & Burnstock, G. (1990). Effect of adenosine triphosphate and related purines in the rat gastric fundus. *Arch. Int. Pharmacodyn. Ther.* **303**, 199-215.
592. James, S. & Burnstock, G. (1990). Colocalization of peptides and a catecholamine-synthesizing enzyme in intramural neurones of the newborn guinea-pig urinary bladder in culture. *Regul. Pept.* **28**, 177-188.
593. Ralevic, V., Milner, P., Hudlická, O., Kristek, F. & Burnstock, G. (1990). Substance P is released from the endothelium of normal and capsaicin-treated rat hindlimb vasculature, *in vivo*, by increased flow. *Circ. Res.* **66**, 1178-1183.
594. Allen, T.G.J. & Burnstock, G. (1990). GABA_A receptor-mediated increase in membrane chloride conductance in rat paratracheal neurones. *Br. J. Pharmacol.* **100**, 261-268.
595. Allen, T.G.J. & Burnstock, G. (1990). The actions of adenosine 5'-triphosphate on guinea-pig intracardiac neurones in culture. *Br. J. Pharmacol.* **100**, 269-276.

596. Corr, L.A., Aberdeen, J.A., Milner, P., Lincoln, J. & Burnstock, G. (1990). Sympathetic and nonsympathetic neuropeptide Y-containing nerves in the rat myocardium and coronary arteries. *Circ. Res.* **66**, 1602-1609.
597. Belai, A. & Burnstock, G. (1990). Changes in adrenergic and peptidergic nerves in the submucous plexus of streptozotocin-diabetic rat ileum. *Gastroenterology* **98**, 1427-1436.
- *598. Burnstock, G. (1990). Classification and characterization of purinoceptors. In: *Purines in Cellular Signalling: Targets for New Drugs*. Eds. K.A. Jacobson, J.W. Daly & V. Manganiello, Springer, New York. pp. 241-253.
- *599. Burnstock, G. (1990). Innervation of bladder and bowel. In: *Neurobiology of Incontinence. CIBA Foundation Symposium No. 15*. Eds. G. Bock & J. Whelan, John Wiley, Chichester. pp. 2-26.
600. Ellis, J.L. & Burnstock, G. (1990). Neuropeptide Y neuromodulation of sympathetic co-transmission in the guinea-pig vas deferens. *Br. J. Pharmacol.* **100**, 457-462.
- *601. Burnstock, G. (1990). Co-transmission. The Fifth Heymans Lecture - Ghent, February 17, 1990. *Arch. Int. Pharmacodyn. Ther.* **304**, 7-33.
602. James, S., Hassall, C.J.S., Polak, J.M. & Burnstock, G. (1990). Autoradiographic localization of specific atrial natriuretic peptide binding sites on immunocytochemically identified cells in cultures from rat and guinea-pig hearts. *Cell Tissue Res.* **261**, 301-312.
- *603. Burnstock, G. (1990). Noradrenaline and ATP as cotransmitters in sympathetic nerves. *Neurochem. Int.* **17**, 357-368.
604. Milner, P., Bodin, P., Loesch, A. & Burnstock, G. (1990). Rapid release of endothelin and ATP from isolated aortic endothelial cells exposed to increased flow. *Biochem. Biophys. Res. Commun.* **170**, 649-656.
- *605. Burnstock, G. (1990). Changes in expression of autonomic nerves in aging and disease. *J. Auton. Nerv. Syst.* **30**, S25-S34.
606. Milner, P., Crowe, R., Kamm, M., Lennard-Jones, J.E. & Burnstock, G. (1990). Vasoactive intestinal polypeptide levels of the distal sigmoid colon are reduced in idiopathic constipation and increased in diverticular disease. *Gastroenterology* **99**, 666-675.
607. Bo, X. & Burnstock, G. (1990). High- and low-affinity binding sites for [³H]- α,β -methylene ATP in rat urinary bladder membranes. *Br. J. Pharmacol.* **101**, 291-296.
608. Bo, X. & Burnstock, G. (1990). The effects of Bay K8644 and nifedipine on the responses of rat urinary bladder to electrical field stimulation, β,γ -methylene ATP and acetylcholine. *Br. J. Pharmacol.* **101**, 494-498.
609. Moss, H.E., Tansey, E.M., Milner, P., Lincoln, J. & Burnstock, G. (1990). Neuropeptide immunoreactivity and choline acetyltransferase activity in the mouse urinary bladder following inoculation with Semliki Forest Virus. *J. Auton. Nerv. Syst.* **31**, 47-56.

610. Milner, P., Kirkpatrick, K.A., Ralevic, V., Toothill, V., Pearson, J.D. & Burnstock, G. (1990). Endothelial cells cultured from human umbilical vein release ATP, substance P and acetylcholine in response to increased flow. *Proc. Roy. Soc. B* **241**, 245-248.
611. Burnstock, G. (1990). Citation Classic "A basis for distinguishing two types of purinergic receptor", 1978. *Current Contents: Life Sciences* **33**, 18.
612. Maynard, K.I., Saville, V.L. & Burnstock, G. (1990). Sensory-motor neuromodulation of sympathetic vasoconstriction in the rabbit central ear artery. *Eur. J. Pharmacol.* **187**, 171-182.
- *613. Lincoln, J. & Burnstock, G. (1990). Neural-endothelial interactions in control of local blood flow. In: *The Endothelium: An Introduction to Current Research*. Ed. J. Warren, Wiley-Liss, New York. pp. 21-32.
614. Hassall, C.J.S., Penketh, R., Rodeck, C. & Burnstock, G. (1990). The intracardiac neurones of the fetal human heart in culture. *Anat. Embryol.* **182**, 329-337.
615. Hassall, C.J.S., Penketh, R., Rodeck, C. & Burnstock, G. (1990). Immunocytochemical studies of cardiac myocytes and other non-neuronal cells of the fetal human heart in culture. *Anat. Embryol.* **182**, 339-346.
616. Hoyle, C.H.V., Kamm, M.A., Burnstock, G. & Lennard-Jones, J.E. (1990). Enkephalins modulate inhibitory neuromuscular transmission in circular muscle of human colon via d-opioid receptors. *J. Physiol. (Lond.)* **431**, 465-478.
617. Crowe, R. & Burnstock, G. (1990). The subserosal ganglia of the human taenia. *Neurosci. Lett.* **119**, 203-206.
- *618. Burnstock, G. (1990). Overview - purinergic mechanisms. In: *Biological Actions of Extracellular ATP. Ann. N.Y. Acad. Sci. vol. 603*. Eds. G.R. Dubyak & J.A. Fedan, New York Academy of Sciences, New York. pp. 1-18.
- *619. Burnstock, G. (1990). Dual control of local blood flow by purines. In: *Biological Actions of Extracellular ATP. N.Y. Acad. Sci. vol. 603*. Eds. G.R. Dubyak & J.A. Fedan, New York Academy of Sciences, New York. pp. 31-45.
620. Ralevic, V., Hoyle, C.H.V. & Burnstock, G. (1990). Effects of long-term laxative treatment on rat mesenteric resistance vessel responses in vitro. *Gastroenterology* **99**, 1352-1357.
621. Jackowski, A., Crockard, A., Burnstock, G., Ross Russell, R. & Kristek, F. (1990). The time course of intracranial pathophysiological changes following experimental subarachnoid haemorrhage in the rat. *J. Cereb. Blood Flow Metab.* **10**, 835-849.
622. Knight, G.E., Hoyle, C.H.V. & Burnstock, G. (1990). Glibenclamide antagonises the responses to ATP, but not adenosine or adrenaline, in the gastric ligament of the starfish *Asterias rubens*. *Comp. Biochem. Physiol.* **97C**, 363-367.
623. Cavanagh, J.F.R., Mione, M.C. & Burnstock, G. (1990). Use of enhanced silver staining combined with electron microscopical immunolabelling to demonstrate the colocalization of neuropeptide Y and vasoactive intestinal polypeptide in cerebrovascular nerves. *Neuroscience* **39**, 775-785.

- *624. Burnstock, G. (1990). Local mechanisms of blood flow control by perivascular nerves and endothelium. *J. Hypertens.* **8 (Suppl.7)**, S95-S106.
625. Speakman, C.T.M., Hoyle, C.H.V., Kamm, M.A., Henry, M.M., Nicholls, R.J. & Burnstock, G. (1990). Adrenergic control of the internal anal sphincter is abnormal in patients with idiopathic faecal incontinence. *Br. J. Surg.* **77**, 1342-1344.
626. Ellis, J.L. & Burnstock, G. (1990). Modulation by prostaglandin E₂ of ATP and noradrenaline co-transmission in the guinea-pig vas deferens. *J. Auton. Pharmacol.* **10**, 363-372.
- *627. Pelleg, A. & Burnstock, G. (1990). Physiologic importance of adenosine 5'-triphosphate released from nerve terminals and its degradation to adenosine in humans. *Circulation* **82**, 2269-2272.
628. Török, J. & Burnstock, G. (1990). Chybanie inhibičného účinku ATP a adenozínu na sympatikovú neurotransmisiu vo v.portae morcat'a. *Bratisl. lek. Listy* **91**, 833-838.
629. Gaw, A.J., Aberdeen, J., Humphrey, P.A., Wadsworth, R.M. & Burnstock, G. (1990). Characterisation of 5-hydroxytryptamine uptake mechanisms in the sympathetic perivascular nerves of the sheep middle cerebral artery. *J. Vasc. Med. Biol.* **2**, 229-305.
630. Stewart-Lee, A.L., Maynard, K., Lincoln, J. & Burnstock, G. (1991). Sympathetic neurotransmission in the isolated rabbit ear artery is affected as early as one week following a single dose of X-irradiation. *Br. J. Pharmacol.* **102**, 23-26.
631. Tomlinson, A., Van Vlijmen, H., Loesch, A. & Burnstock, G. (1991). An immunohistochemical study of endothelial cell heterogeneity in the rat: observation in "en face" Häutchen preparations. *Cell Tissue Res.* **263**, 173-181.
- *632. Bloom, S. & Burnstock, G.(Eds.). (1991). *Peptides: A Target for New Drug Development*. IBC Technical Services Ltd. London, pp. 1-151.
633. Loesch, A., Tomlinson, A. & Burnstock, G. (1991). Localization of arginine-vasopressin in endothelial cells of rat pulmonary artery. *Anat. Embryol.* **183**, 129-134.
634. Gaw, A.J., Aberdeen, J., Humphrey, P.A.A., Wadsworth, R.M. & Burnstock, G. (1991). Relaxation of sheep cerebral arteries by vasoactive intestinal polypeptide and neurogenic stimulation: inhibition by L-N^G-monomethyl arginine in endothelium-denuded vessels. *Br. J. Pharmacol.* **102**, 567-572.
635. Corr, L.A., Burnstock, G. & Poole-Wilson, P. (1991). Responses of the rabbit epicardial coronary artery to acetylcholine and adrenoceptor agonists. *Cardiovasc. Res.* **25**, 256-262.
636. Fehér, E. & Burnstock, G. (1991). Ultrastructure and distribution of somatostatin-like immunoreactive neurons and nerve fibres in the coeliac ganglion of cats. *Cell Tissue Res.* **263**, 567-572.
- *637. Lincoln, J., Ralevic, V. & Burnstock, G. (1991). Neurohumoral substances and the endothelium. In: *Cardiovascular Significance of Endothelium-Derived Vasoactive Factors*. Ed. G.M. Rubanyi, Futura, Mount Kisco, NY. pp. 83-110.

638. Crowe, R., Moss, H.E., Chapple, C.R., Light, J.K. & Burnstock, G. (1991). Patients with lower motor spinal cord lesion: a decrease of vasoactive intestinal polypeptide, calcitonin gene-related peptide and substance P, but not neuropeptide Y and somatostatin-immunoreactive nerves in the detrusor muscle of the bladder. *J. Urol.* **145**, 600-604.
639. Belai, A., Lincoln, J., Milner, P. & Burnstock, G. (1991). Differential effect of streptozotocin-induced diabetes on the innervation of the ileum and distal colon. *Gastroenterology* **100**, 1024-1032.
640. Corr, L., Burnstock, G. & Poole-Wilson, P. (1991). Magnesium inhibits the responses to neuropeptide Y in the rabbit coronary artery. *J. Mol. Cell. Cardiol.* **23**, 231-235.
641. Mathie, R.T., Alexander, B., Ralevic, V. & Burnstock, G. (1991). Adenosine-induced dilatation of the rabbit hepatic arterial vasculature is mediated by A₂-purinoceptors. *Br. J. Pharmacol.* **103**, 1103-1107.
642. Ralevic, V., Mathie, R.T., Alexander, B. & Burnstock, G. (1991). Characterization of P_{2X}- and P_{2Y}-purinoceptors in the rabbit hepatic arterial vasculature. *Br. J. Pharmacol.* **103**, 1108-1113.
643. Bodin, P., Bailey, D.J. & Burnstock, G. (1991). Increased flow-induced ATP release from isolated vascular endothelial but not smooth muscle cells. *Br. J. Pharmacol.* **103**, 1203-1205.
644. Brizzolara, A.L. & Burnstock, G. (1991). Endothelium-dependent and endothelium-independent vasodilatation of the hepatic artery of the rabbit. *Br. J. Pharmacol.* **103**, 1206-1212.
645. Maynard, K.I., Saville, V.L. & Burnstock, G. (1991). Somatostatin modulates vascular sympathetic neurotransmission in the rabbit ear artery. *Eur. J. Pharmacol.* **196**, 125-131.
- *645a. Burnstock, G. (1991). Plasticity of autonomic transmission. *J. Auton. Nerv. Syst.* **33**, 137-138.
646. Mathie, R.T., Ralevic, V., Alexander, B. & Burnstock, G. (1991). Nitric oxide is the mediator of ATP-induced dilatation of the rabbit hepatic arterial vascular bed. *Br. J. Pharmacol.* **103**, 1602-1606.
647. Ralevic, V., Aberdeen, J.A. & Burnstock, G. (1991). Acrylamide-induced autonomic neuropathy of rat mesenteric vessels: histological and pharmacological studies. *J. Auton. Nerv. Syst.* **34**, 77-88.
648. Dikranian, K., Petrov, M., Georgieva, K. & Burnstock, G. (1991). Distribution of anionic sites in gut tissue: an electron-microscopical study. *Cell Tissue Res.* **264**, 385-387.
649. Aberdeen, J., Moffitt, D. & Burnstock, G. (1991). Increases in NPY in non-sympathetic nerve fibres supplying rat mesenteric vessels after immunosympathectomy. *Regul. Pept.* **34**, 43-54.
650. Crowe, R., Burnstock, G., Dickinson, I.K. & Pryor, J.P. (1991). The human penis: an unusual penetration of NPY immunoreactive nerves within the medial muscle coat of the deep dorsal vein. *J. Urol.* **145**, 1292-1296.

651. Milner, P., Lincoln, J., Corr, L.A., Aberdeen, J.A. & Burnstock, G. (1991). Neuropeptide Y in non-sympathetic nerves of the rat: changes during maturation but not after guanethidine sympathectomy. *Neuroscience* **43**, 661-669.
652. Crowe, R., Chapple, C.R. & Burnstock, G. (1991). The human prostate gland: a histochemical and immunohistochemical study of neuropeptides, serotonin, dopamine β -hydroxylase and acetylcholinesterase in autonomic nerves and ganglia. *Br. J. Urol.* **68**, 53-61.
- *653. Ralevic, V. & Burnstock, G. (1991). Roles of P2-purinoceptors in the cardiovascular system. *Circulation* **84**, 1-14.
- *654. Burnstock, G. (1991). Distribution and roles of purinoceptor subtypes. *Nucleosides Nucleotides* **10**, 917-930.
655. Corr, L., Poole-Wilson, P. & Burnstock, G. (1991). Responses of coronary arteries to neurotransmitters: changes with sexual maturity in the female rabbit. *J. Cardiovasc. Pharmacol.* **18**, 144-150.
- *656. Burnstock, G. (1991). Overview (purinergic receptors). In: *Adenosine and Adenine Nucleotides in the Biological System*. Eds. S. Imai & M. Nakazawa, Elsevier, Amsterdam. pp. 1-16.
657. Saffrey, M.J., Bailey, D.J. & Burnstock, G. (1991). Growth of enteric neurones from isolated myenteric ganglia in dissociated cell culture. *Cell Tissue Res.* **265**, 527-534.
658. James, S. & Burnstock, G. (1991). Atrial and brain natriuretic peptides share binding sites on cultured cells from the rat trachea. *Cell Tissue Res.* **265**, 555-565.
659. Corr, L. & Burnstock, G. (1991). Vasodilator response of coronary smooth muscle to the sympathetic co-transmitters noradrenaline and adenosine 5'-triphosphate. *Br. J. Pharmacol.* **104**, 337-342.
660. Maynard, K.I., Lincoln, J., Milner, P. & Burnstock, G. (1991). Changes in sympathetic and endothelium-mediated responses in the rabbit central ear artery after acrylamide treatment. *J. Auton. Nerv. Syst.* **36**, 55-64.
- *661. Hoyle, C.H.V. & Burnstock, G. (1991). Purinergic receptors. In: *Receptor Data for Biological Experiments*. Eds. H.N. Doods & J.C.A. van Meel, Ellis Horwood, Chichester. pp. 54-61.
- *662. Hoyle, C.H.V. & Burnstock, G. (1991). ATP receptors and their physiological roles. In: *Adenosine in the Nervous System*. Ed. T.W. Stone, Academic Press, London. pp. 43-76.
663. Stewart-Lee, A.L. & Burnstock, G. (1991). Changes in vasoconstrictor and vasodilator responses of the basilar artery during maturation in the Watanabe heritable hyperlipidemic rabbit differ from those in the New Zealand white rabbit. *Arterioscler. Thromb.* **11**, 1147-1155.
664. Loesch, A., Bodin, P. & Burnstock, G. (1991). Colocalization of endothelin, vasopressin and serotonin in cultured endothelial cells of rabbit aorta. *Peptides* **12**, 1095-1103.

- *665. Burnstock, G. (1991). Plasticity in expression of cotransmitters and autonomic nerves in aging and disease. In: *Plasticity and Regeneration of the Nervous System. Advances in Experimental Medicine and Biology*. Eds. P.S. Timiras & A. Privat, Plenum Press, New York. pp. 291-301.
666. Ralevic, V., Mathie, R.T., Alexander, B. & Burnstock, G. (1991). N^G-nitro-L-arginine methyl ester attenuates vasodilator responses to acetylcholine but enhances those to sodium nitroprusside. *J. Pharm. Pharmacol.* **43**, 871-874.
667. Ralevic, V. & Burnstock, G. (1991). Effects of purines and pyrimidines in the rat mesenteric arterial bed. *Circ. Res.* **69**, 1583-1590.
668. Belai, A., Lefebvre, R.A. & Burnstock, G. (1991). Motor activity and neurotransmitter release in the gastric fundus of streptozotocin-diabetic rats. *Eur. J. Pharmacol.* **194**, 225-234.
669. Stewart-Lee, A.L., Aberdeen, J.A. & Burnstock, G. (1991). Sympathetic neurotransmission in the Watanabe heritable hyperlipidemic rabbit mesenteric artery. *Cardiovasc. Res.* **25**, 1035-1041.
- *670. Lincoln, J., Crowe, R. & Burnstock, G. (1991). Neuropeptides and impotence. In: *The Diagnosis and Management of Male Erectile Dysfunction*. Eds. R.S. Kirby, C. Carson & G.D. Webster, Butterworths-Heinemann, Oxford. pp. 3-18.
- *671. Burnstock, G. (1991). Smooth muscle. *J. Vasc. Med. Biol.* **3**, 81-83.
- *672. Burnstock, G., Stewart-Lee, A.L., Brizzolara, A.L., Tomlinson, A. & Corr, L. (1991). Dual control by nerves and endothelial cells of arterial blood flow in atherosclerosis. In: *Atherosclerotic Plaques*. Eds. R.W. Wissler, M.G. Bond, M. Mercuri & P. Tanganelli, Plenum Press, New York. pp. 285-292.
673. Chapple, C.R., Crowe, R., Gilpin, S.A., Gosling, J. & Burnstock, G. (1991). The innervation of the human prostate gland - the changes associated with benign enlargement. *J. Urol.* **146**, 1637-1644.
- *674. Ralevic, V., Lincoln, J. & Burnstock, G. (1992). The release of vasoactive substances from endothelial cells. In: *Endothelial Regulation of Vascular Tone*. Eds. U.S. Ryan & G.M. Rubanyi, Marcel Dekker, New York. pp. 297-328.
675. Maynard, K.I., Stewart-Lee, A.L., Milner, P. & Burnstock, G. (1992). X-irradiation attenuates relaxant responses in the rabbit ear artery. *Br. J. Pharmacol.* **105**, 126-128.
676. Brizzolara, A.L., Tomlinson, A., Aberdeen, J., Gourdie, R.G. & Burnstock, G. (1992). Sex and age as factors influencing the vascular reactivity in Watanabe heritable hyperlipidemic (WHHL) rabbits: A pharmacological and morphological study of the hepatic artery. *J. Cardiovasc. Pharmacol.* **19**, 86-95.
677. Ralevic, V., Milner, P., Kirkpatrick, K.A. & Burnstock, G. (1992). Flow-induced release of adenosine 5'-triphosphate from endothelial cells of the rat mesenteric arterial bed. *Experientia* **48**, 31-34.

- *678. Burnstock, G. (1992). (Series Editor) *The Autonomic Nervous System. Vol. 1. Autonomic Neuroeffector Mechanisms*. Eds. Burnstock, G. and Hoyle, C.H.V. Harwood Academic Publishers, Switzerland, pp. 1-515.
679. Aberdeen, J., Milner, P., Lincoln, J. & Burnstock, G. (1992). Guanethidine sympathectomy of mature rats leads to increases in CGRP- and VIP-containing nerves. *Neuroscience* **47**, 453-461.
680. Bodin, P., Milner, P., Winter, R. & Burnstock, G. (1992). Chronic hypoxia changes the ratio of endothelin to ATP release from rat aortic endothelial cells exposed to high flow. *Proc. Roy. Soc. Lond. Ser. B* **247**, 131-135.
- *681. Burnstock, G. (1992). Development of nerve-muscle interactions. In: *Gastrointestinal Motility. Proceedings of the Twelfth BSG.SB International Workshop 1991*. Ed. D.L. Wingate, SmithKline Beecham Pharmaceuticals, UK. pp. 1-2.
- *682. Belai, A. & Burnstock, G. (1992). The myenteric plexus: neuropeptides and their receptors. In: *Coloproctology and the Pelvic Floor, 2nd edn*. Eds. M.M. Henry & M. Swash, Butterworth Heinemann, Oxford. pp. 20-36.
683. Milner, P., Appenzeller, O., Qualls, C. & Burnstock, G. (1992). Differential vulnerability of neuropeptides in nerves of the vasa nervorum to streptozotocin-induced diabetes. *Brain Res.* **574**, 56-62.
684. Belai, A. & Burnstock, G. (1992). Restoration of diabetes-induced changes in enteric nerves by phorbol 12,13-dibutyrate. *Brain Res.* **575**, 356-358.
685. Knight, G.E., Hoyle, C.H.V. & Burnstock, G. (1992). Effects of adenine nucleosides and nucleotides on the isolated heart of the snail *Helix aspersa* and the slug *Arion ater*. *Comp. Biochem. Physiol.* **101C**, 175-181.
686. Saffrey, M.J., Hassall, C.J.S., Hoyle, C.H.V., Belai, A., Moss, J., Schmidt, H.H.H.W., Förstermann, U., Murad, F. & Burnstock, G. (1992). Colocalisation of nitric oxide synthase and NADPH-diaphorase in cultured myenteric neurones. *Neuroreport* **3**, 333-336.
687. Alexander, B., Mathie, R.T., Ralevic, V. & Burnstock, G. (1992). An isolated dual-perfused rabbit liver preparation for the study of hepatic blood flow regulation. *J. Pharmacol. Toxicol. Meth.* **27**, 17-22.
688. Loesch, A., Maynard, K.I. & Burnstock, G. (1992). Calcitonin gene-related peptide- and Neuropeptide Y-like immunoreactivity in endothelial cells after long-term stimulation of perivascular nerves. *Neuroscience* **48**, 723-726.
689. Mione, M.C., Cavanagh, J.C., Kirkpatrick, K.A. & Burnstock, G. (1992). Plasticity in expression of calcitonin-gene-related peptide- and substance P-immunoreactivity in ganglia and fibres following guanethidine and/or capsaicin denervation. *Cell Tissue Res.* **268**, 491-504.
690. Belai, A., Aberdeen, J. & Burnstock, G. (1992). Differential effect of immunosympathectomy on the expression of enteric neurotransmitters. *Neurosci. Lett.* **139**, 157-160.
691. Bo, X. & Burnstock, G. (1992). Species differences in localization of [³H] α , β -methylene ATP binding sites in urinary bladder and urethra of rat, guinea-pig and rabbit. *Eur. J. Pharmacol.* **216**, 59-66.

692. Stewart-Lee, A.L., Aberdeen, J. & Burnstock, G. (1992). The effect of atherosclerosis on neuromodulation of sympathetic neurotransmission by NPY and CGRP in the rabbit mesenteric artery. *Eur. J. Pharmacol.* **216**, 167-174.
- *693. Burnstock, G. & Milner, P. (1992). Structural and chemical organisation of the autonomic nervous system with special reference to nonadrenergic, noncholinergic transmission. In: *Autonomic Failure*. 3rd edn. Ed. R. Bannister, Oxford University Press, Oxford. pp. 107-125.
- *694. Burnstock, G. (1992). Neuromuscular transmission and neuromodulation in the gastrointestinal tract. In: *Gastrointestinal Dysmotility: Focus on Cisapride. Proc. 2nd Int. Cisapride Investigators Meeting, Nice, December 3-4 1990*. Eds. R.C. Heading & J.D. Wood, Raven Press, New York. pp. 41-60.
695. Knight, G.E., Hoyle, C.H.V. & Burnstock, G. (1992). Quinacrine-staining of neurones, and activity of purine nucleosides and nucleotides in marine and terrestrial invertebrates from several phyla. *Comp. Biochem. Physiol.* **102C**, 305-314.
696. Crowe, R., Kamm, M.A., Burnstock, G. & Lennard-Jones, J.E. (1992). Peptide-containing neurons in different regions of the submucous plexus of the human sigmoid colon. *Gastroenterology* **102**, 461-467.
- *697. Saffrey, M.J., Hassall, C.J.S., Allen, T.G.J. & Burnstock, G. (1992). Ganglia within the gut, heart, urinary bladder and airways: studies in tissue culture. *Int. Rev. Cytol.* **136**, 93-144.
698. Reekie, F.M. & Burnstock, G. (1992). Effects of noradrenaline on rat paratracheal neurones and localization of an endogenous source of noradrenaline. *Br. J. Pharmacol.* **107**, 471-475.
699. Fehér, E., Fodor, M. & Burnstock, G. (1992). Distribution of somatostatin-immunoreactive nerve fibres in Peyer's patches. *Gut* **33**, 1195-1198.
700. Rubino, A., Ralevic, V. & Burnstock, G. (1992). Prejunctional modulation of sensory-motor nerve mediated vasodilation of the rat mesenteric arterial bed by adenosine. *Eur. J. Pharmacol.* **220**, 95-98.
701. Vials, A. & Burnstock, G. (1992). Effects of nitric oxide synthase inhibitors, L-N^G-nitroarginine and L-N^G-nitroarginine methyl ester on responses to vasodilators of the guinea-pig coronary vasculature. *Br. J. Pharmacol.* **107**, 604-609.
702. Speakman, C.T.M., Hoyle, C.H.V., Kamm, M.A., Henry, M.M., Nicholls, R.J. & Burnstock, G. (1992). Decreased sensitivity of muscarinic but not 5-hydroxytryptamine receptors of the internal anal sphincter in neurogenic faecal incontinence. *Br. J. Surg.* **79**, 829-832.
703. Milner, P., Belai, A., Tomlinson, A., Hoyle, C.H.V., Sarter, S. & Burnstock, G. (1992). Effects of a long-term laxative treatment on neuropeptides in rat mesenteric vessels and caecum. *J. Pharm. Pharmacol.* **44**, 777-779.
704. Chapple, C.R., Milner, P., Moss, H. & Burnstock, G. (1992). Loss of sensory neuropeptides in the obstructed human bladder. *Br. J. Urol.* **70**, 373-381.

705. Gray, C., Hukkanen, M., Konttinen, Y.T., Terenghi, G., Arnett, T.R., Jones, S.J., Burnstock, G. & Polak, J.M. (1992). Rapid neural growth: calcitonin gene-related peptide (CGRP)- substance P- and vasoactive intestinal peptide (VIP)-containing nerves attain exceptional growth rates in regenerating deer antler. *Neuroscience* **50**, 953-963.
706. Tew, E.M.M., Anderson, P.N. & Burnstock, G. (1992). Implantation of the myenteric plexus into the corpus striatum of adult rats: survival of the neurones and glia and interactions with host brain. *Restor. Neurol. Neurosci.* **4**, 311-321.
707. Belai, A., Schmidt, H.H.H.W., Hoyle, C.H.V., Hassall, C.J.S., Saffrey, M.J., Moss, J., Förstermann, U., Murad, F. & Burnstock, G. (1992). Colocalisation of nitric oxide synthase and NADPH-diaphorase in the myenteric plexus of the rat gut. *Neurosci. Lett.* **143**, 60-64.
708. Hassall, C.J.S., Saffrey, M.J., Belai, A., Hoyle, C.H.V., Moules, E.W., Moss, J., Schmidt, H.H.H.W., Förstermann, U. & Burnstock, G. (1992). Nitric oxide synthase immunoreactivity and NADPH-diaphorase activity in a subpopulation of intrinsic neurones of the guinea pig heart. *Neurosci. Lett.* **143**, 65-68.
709. Afework, M., Tomlinson, A., Belai, A. & Burnstock, G. (1992). Colocalisation of nitric oxide synthase and NADPH-diaphorase in rat adrenal gland. *NeuroReport* **3**, 893-896.
710. Bo, X., Simon, J., Burnstock, G. & Barnard, E.A. (1992). Solubilization and molecular size determination of the P₂X- purinoceptor from rat vas deferens. *J. Biol. Chem.* **267**, 17581-17587.
711. Maynard, K.I., Loesch, A. & Burnstock, G. (1992). Changes in purinergic responses of the rabbit isolated central ear artery after chronic electrical stimulation in vivo. *Br. J. Pharmacol.* **107**, 833-836.
712. Hoyle, C.H.V., Kamm, M., Lennard-Jones, J.E. & Burnstock, G. (1992). An *in vitro* electrophysiological study of the colon from patients with idiopathic constipation. *Clin. Auton. Res.* **2**, 327-333.
713. Siou, G., Belai, A. & Burnstock, G. (1992). Age-related changes in the expression of galanin- and calretinin-immunoreactive nerves of guinea-pig gall bladder. *NeuroReport* **3**, 990-992.
714. Parkhouse, N., Crowe, R., McGrouther, D.A. & Burnstock, G. (1992). Painful hypertrophic scarring and neuropeptides. *Lancet* **340**, 1410.
715. Rennick, R.E., Loesch, A. & Burnstock, G. (1992). Endothelin-, vasopressin- and substance P-like immunoreactivity in cultured and intact epithelium from rabbit trachea. *Thorax* **47**, 1044-1049.
716. Kirkpatrick, K.A. & Burnstock, G. (1992). Evidence that inhibition of ATP release from sympathetic nerves by adenosine is a physiological mechanism. *Gen Pharm.* **23**, 1045-1050.
- *717. Burnstock, G. (1992). (Series Editor). *The Autonomic Nervous System. Volume 2. Development, Regeneration and Plasticity of the Autonomic Nervous System*. Eds. Henry I.A. and Hill C.E. Harwood Academic Publishers, Switzerland, pp. 1-472.

718. Milner, P., Bodin, P., Loesch, A. & Burnstock, G. (1992). Increased shear stress leads to differential release of endothelin and ATP from isolated endothelial cells from 4- and 12-month-old male rabbit aorta. *J. Vasc. Res.* **29**, 420-425.
719. Knight, G.E., Hoyle, C.H.V. & Burnstock, G. (1992). Responses of the rectum and oesophagus of the snail *Helix aspersa* to purine nucleotides and nucleosides. *Comp. Biochem. Physiol.* **103C**, 535-540.
- *719a. Mathie, R.T., Ralevic, V., Alexander, B. & Burnstock, G. (1992). Nitric oxide is involved in ATP-induced dilatation of the rabbit hepatic arterial vascular bed. In: *Biology of Nitric Oxide, Part 1, Physiological and Clinical Aspects*. Eds. S. Moncada, M.A. Marletta, J.B. Higgs, Jr. & E.A. Higgs, Portland Press, London. pp. 90-92.
720. Rennick, R.E., Milner, P. & Burnstock, G. (1993). Thrombin stimulates release of endothelin and vasopressin, but not substance P, from isolated rabbit tracheal epithelial cells. *Eur. J. Pharmacol.* **230**, 367-370.
721. Hassall, C.J.S., Saffrey, M.J. & Burnstock, G. (1993). Expression of NADPH-diaphorase activity by guinea-pig paratracheal neurones. *Neuroreport* **4**, 49-52.
722. Rennick, R.E., Connat, J.-L., Burnstock, G., Rothery, S., Severs, N.J. & Green, C.R. (1993). Expression of connexin43 gap junctions between cultured vascular smooth muscle cells is dependent upon phenotype. *Cell Tissue Res.* **271**, 323-332.
723. Belai, A., Facer, P., Bishop, A., Polak, J.M. & Burnstock, G. (1993). Effect of streptozotocin-diabetes on the level of VIP mRNA in myenteric neurons. *Neuroreport* **4**, 291-294.
724. Mione, M.C., Cavanagh, J.F.R. & Burnstock, G. (1993). Uptake of 5-hydroxydopamine in sensory nerves of guinea-pig uterine arteries in late pregnancy. *J. Neurocytol.* **22**, 164-175.
725. James, S., Patel, N.J., Thomas, P.K. & Burnstock, G. (1993). Immunocytochemical localisation of insulin receptors on rat superior cervical ganglion neurons in dissociated cell culture. *J. Anat.* **182**, 95-100.
726. Cai, W.Q., Bodin, P., Sexton, A., Loesch, A. & Burnstock, G. (1993). Localization of neuropeptide Y and atrial natriuretic peptide in the endothelial cells of human umbilical blood vessels. *Cell Tissue Res.* **272**, 175-181.
- *727. Burnstock, G. (1993). Introduction: Changing face of autonomic and sensory nerves in the circulation. In: *Vascular Innervation and Receptor Mechanisms: New Perspectives*, Eds. L. Edvinsson and R. Uddman, Academic Press Inc, USA, pp. 1-22.
- *728. Burnstock, G. (1993). Physiological and pathological roles of purines: an update. *Drug Dev. Res.* **28**, 195-206.
- *729. Lincoln, J. & Burnstock, G. (1993). Autonomic innervation of the urinary bladder and urethra. In: *The Autonomic Nervous System, Vol. 3. Nervous Control of the Urogenital System*. Ed. C. Maggi, Harwood Academic Publishers, Switzerland. pp. 33-69.

- *730. Hoyle, C.H.V. & Burnstock, G. (1993). Postganglionic efferent transmission to the bladder and urethra. In: *The Autonomic Nervous System, Vol. 3. Nervous Control of the Urogenital System*. Ed. C. Maggi, Harwood Academic Publishers, Switzerland. pp. 349-383.
- *731. Burnstock, G. (1993). (Series Editor). *The Autonomic Nervous System. Volume 3. Nervous Control of the Urogenital System*. Ed. C.A. Maggi. Harwood Academic Publishers, Switzerland, pp. 1-588.
- *732. Burnstock, G. (1993). Hypoxia, endothelium and purines. *Drug Dev. Res.* **28**, 301-305.
733. Soediono, P., Belai, A. & Burnstock, G. (1993). Prevention of neuropathy in the pyloric sphincter of streptozotocin - diabetic rats by gangliosides. *Gastroenterology* **104**, 1072-1082.
734. Corr, L., Burnstock, G. & Poole-Wilson, P. (1993). Effects of age and hyperlipidemia on rabbit coronary responses to neuropeptide Y and the interaction with norepinephrine. *Peptides* **14**, 359-364.
- *735. Ralevic, V. & Burnstock, G. (1993). *Monograph. Neural-Endothelial Interactions in the Control of Local Vascular Tone*. Medical Intelligence Unit. R.G. Landes Company, Medical Publishers, Austin, Texas, pp. 1-117.
736. Hasséssian, H., Bodin, P. & Burnstock, G. (1993). Blockade by glibenclamide of the flow-induced endothelial release of ATP that contributes to vasodilatation in the pulmonary vascular bed of the rat. *Br. J. Pharmacol.* **109**, 466-472.
737. Vials, A. & Burnstock, G. (1993). A₂-purinoceptor-mediated relaxation in the guinea-pig coronary vasculature: a role for nitric oxide. *Br. J. Pharmacol.* **109**, 424-429.
738. Bo, X. & Burnstock, G. (1993). Heterogeneous distribution of [³H] α,β-methylene ATP binding sites in blood vessels. *J. Vasc. Res.* **30**, 87-101.
- *739. Burnstock, G. (1993). Determinants of signal transmission in healthy and diseased autonomic neuromuscular junctions. *Diabetic Med.* **10**, 64S-69S.
740. Bo, X. & Burnstock, G. (1993). Triphosphate, the key structure of the ATP molecule responsible for interaction with P₂X purinoceptors. *Gen. Pharmacol.* **24**, 637-640.
741. Brizzolara, A.L., Crowe, R. & Burnstock, G. (1993). Evidence for the involvement of both ATP and nitric oxide in non-adrenergic, non-cholinergic inhibitory neurotransmission in the rabbit portal vein. *Br. J. Pharmacol. (Special Report)* **109**, 606-608.
742. Zagorodnyuk, V., Hoyle, C.H.V. & Burnstock, G. (1993). An electrophysiological study of developmental changes in the innervation of the guinea-pig taenia coli. *Pflügers Arch.* **423**, 427-433.
743. Webb, T.E., Simon, J., Krishek, B.J., Bateson, A.N., Smart, T.G., King, B.F., Burnstock, G. & Barnard, E.A. (1993). Cloning and functional expression of a brain G-protein coupled ATP receptor. *FEBS Lett.* **324**, 219-225.
744. Loesch, A. & Burnstock, G. (1993). Ultrastructural localization of nitric oxide synthase in intima of rabbit aorta. *Endothelium* **1**, 23-29.

745. Tanaka, K., Hassall, C.J.S. & Burnstock, G. (1993). Distribution of intracardiac neurones and nerve terminals that contain a marker for nitric oxide, NADPH-diaphorase, in the guinea-pig heart. *Cell Tissue Res.* **273**, 293-300.
746. Loesch, A., Domer, F.R., Alexander, B. & Burnstock, G. (1993). Electron-immunocytochemistry of peptides in endothelial cells of rabbit cerebral vessels following perfusion with a perfluorocarbon emulsion. *Brain Res.* **611**, 333-337.
747. Hassall, C.J.S., Stanford, S.C., Burnstock, G. & Buckley, N.J. (1993). Coexpression of four muscarinic receptor genes by the intrinsic neurones of the rat and guinea-pig heart. *Neuroscience* **56**, 1041-1048.
748. Knight, G.E. & Burnstock, G. (1993). Identification of purinoceptors in the isolated stomach and intestine of the three spined stickleback *Gasterosteus aculeatus* L. *Comp. Biochem. Physiol.* **106C**, 71-78.
749. Vials, A.J. & Burnstock, G. (1993). Effects of pyrimidines on the guinea-pig coronary vasculature. *Br. J. Pharmacol.* **110**, 1091-1097.
750. Ralevic, V., Belai, A. & Burnstock, G. (1993). Impaired sensory-motor nerve function in the isolated mesenteric arterial bed of streptozotocin-diabetic and ganglioside-treated streptozotocin-diabetic rats. *Br. J. Pharmacol.* **110**, 1105-1111.
751. Crowe, R., Mitsou, J., McGrouther, D.A. & Burnstock, G. (1993). An increase in the growth of hair associated with hyperinnervation of the underlying vessels in rabbit skin. *Neurosci. Lett.* **161**, 105-108.
752. Cai, W.Q., Terenghi, G., Bodin, P., Burnstock, G. & Polak, J.M. (1993). In situ hybridization of atrial natriuretic peptide mRNA in the endothelial cells of human umbilical vessels. *Histochemistry* **100**, 277-283.
753. Andrews, T., Lincoln, J., Milner, P., Burnstock, G. & Cowen, T. (1993). Differential regulation of tyrosine hydroxylase protein and activity in rabbit sympathetic neurones after long-term cold exposure: altered responses in ageing. *Brain Res.* **624**, 69-74.
754. Trouslard, J., Mirsky, R., Jessen, K., Burnstock, G. & Brown, D.A. (1993). Intracellular calcium changes associated with cholinergic nicotinic receptor activation in cultured myenteric plexus neurones. *Brain Res.* **624**, 103-108.
755. Knight, G.E. & Burnstock, G. (1993). Acetylcholine induces relaxation via the release of nitric oxide from endothelial cells of the garter snake (*Thamnophis sirtalis parietalis*) aorta. *Comp. Biochem. Physiol.* **106C**, 383-388.
756. Ziganshin, A.U., Hoyle, C.H.V., Bo, X., Lambrecht, G., Mutschler, E., Baumert, H.G. & Burnstock, G. (1993). PPADS selectively antagonizes P_{2X}-purinoceptor-mediated responses in the rabbit urinary bladder. *Br. J. Pharmacol.* **110**, 1491-1495.
757. Domer, F., Alexander, B., Milner, P., Bodin, P. & Burnstock, G. (1993). Effect of changes in rate of vascular perfusion on release of substances into the effluent from the brain of the rabbit. *Brain Res.* **630**, 88-94.

758. Cai, W.Q., Bodin, P., Loesch, A., Sexton, A. & Burnstock, G. (1993). Endothelium of human umbilical blood vessels: Ultrastructural immunolocalization of neuropeptides. *J. Vasc. Res.* **30**, 348-355.
759. Loesch, A., Belai, A. & Burnstock, G. (1993). Ultrastructural localization of NADPH-diaphorase and colocalization of nitric oxide synthase in endothelial cells of the rabbit aorta. *Cell Tissue Res.* **274**, 539-545.
760. Cai, W.Q., Dikranian, K., Bodin, P., Turmaine, M. & Burnstock, G. (1993). Colocalization of vasoactive substances in the endothelial cells of human umbilical vessels. *Cell Tissue Res.* **274**, 533-538.
761. Fischer, B., Boyer, J.L., Hoyle, C.H.V., Ziganshin, A.U., Brizzolara, A.L., Knight, G.E., Zimmet, J., Burnstock, G., Kendall Harden, T. & Jacobson, K.A. (1993). Identification of potent selective P_{2Y} purinoceptor agonists: Structure-activity relationships for 2-thioether derivatives of adenosine 5'-triphosphate. *J. Med. Chem.* **36**, 3937-3946.
762. Ationu, A., Hassall, C.J.S., Moules, E., Mascaro, G., Carter, N.D., Burnstock, G. & Singer, D.R.J. (1993). Expression of insulin-like growth factor-1 by human ventricular explants in culture. *J. Human Hypertens* **7**, 407-409.
763. Lincoln, J., Milner, P., Appenzeller, O., Burnstock, G. & Qualls, C. (1993). Innervation of normal human sural and optic nerves by noradrenaline - and peptide-containing nervi vasorum and nervorum: effect of diabetes and alcoholism. *Brain Res.* **632**, 48-56.
764. Tew, E.M.M., Saffrey, M.J., Anderson, P.T. & Burnstock, G. (1993). Post-natal rat NADPH-diaphorase-containing myenteric neurons extend processes when transplanted into adult rat corpus striatum. *Exp. Neurol.* **124**, 265-273.
- *765. Burnstock, G. (1993). Respiratory and gastro-intestinal parallels: real or contrived? In: *Pathophysiology of the Gut and Airways. An Introduction*. Eds. P. Andrews & J. Widdicombe, Physiology Society Study Guide, Portland Press, London. pp. 1-4.
- *766. Burnstock, G. (1993). Integration of factors controlling vascular tone. Overview. *Anesthesiology.* **79**, 1368-1380.
767. Rubino, A., Ralevic, V. & Burnstock, G. (1993). The P1-purinoceptors that mediate the prejunctional inhibitory effect of adenosine on capsaicin-sensitive non-adrenergic non-cholinergic neurotransmission in the rat mesenteric arterial bed of the A1 subtype. *J. Pharmacol. Exp. Ther.* **267**, 1100-1104.
768. Speakman, C.T.M., Hoyle, C.H.V., Kamm, M.A., Henry, M.M., Nicholls, R.J. & Burnstock, G. (1993). Neuropeptides in the internal anal sphincter in neurogenic faecal incontinence. *Int. J. Colorectal Dis.* **8**, 201-205.
- 768a. Speakman, C.T.M., Hoyle, C.H.V., Kamm, M.A., Henry, M.M., Nicholls, R.J. & Burnstock, G. (1993). Abnormalities of innervation of internal anal sphincter in faecal incontinence. *Dig. Dis. Sci.* **38**, 1961-1969.
- *769. Burnstock, G. (1994). Cotransmitters of catecholamines. *J. Auton. Pharmacol.* **14**, 5-6.

770. Vials, A.J. & Burnstock, G. (1994). The effect of suramin on vasodilator responses to ATP and 2-methylthio-ATP in the Sprague-Dawley rat coronary vasculature. *Eur. J. Pharmacol.* **251**, 299-302.
771. Loesch, A., Belai, A. & Burnstock, G. (1994). An Ultrastructural study of NADPH-diaphorase and nitric oxide synthase in the perivascular nerves and vascular endothelium of the rat basilar artery. *J. Neurocytol.* **23**, 49-59.
772. Reekie, F.M. & Burnstock, G. (1994). Some effects of purines on neurones of guinea-pig superior cervical ganglia. *Gen. Pharmacol.* **25**, 143-148.
773. Abbracchio, M.P., Saffrey, M.J., Hopker, V. & Burnstock, G. (1994). Modulation of astroglial cell proliferation by analogues of adenosine and ATP in primary cultures of rat striatum. *Neuroscience* **59**, 67-76.
774. Ziganshin, A.U., Hoyle, C.H.V., Lambrecht, G., Mutschler, E., Baumert, H.G. & Burnstock, G. (1994). Selective antagonism by PPADS at P_{2X}-purinoceptors in rabbit isolated blood vessels. *Br. J. Pharmacol.* **111**, 923-929.
775. Ralevic, V., Rubino, A. & Burnstock, G. (1994). Prejunctional modulation of sensory-motor nerve-mediated vasodilatation of the rat mesenteric arterial bed by opioid peptides. *J. Pharmacol. Exp. Ther.* **268**, 772-778.
- *776. Barnard, E.A., Burnstock, G. & Webb, T.E. (1994). G protein-coupled receptors for ATP and other nucleotides: a new receptor family. *Trends Pharmacol. Sci.* **15**, 67-70.
777. Brizzolara, A.L., Stewart-Lee, A.L. & Burnstock, G. (1994). Responses of rabbit basilar arteries to vasoconstrictor and vasodilator agents: the effects of atherosclerosis, age and sex. *J. Vasc. Res.* **31**, 106-113.
778. Brizzolara, A.L., Morris, D.G. & Burnstock, G. (1994). Ethanol affects sympathetic cotransmission and endothelium-dependent relaxation in the rat. *Eur. J. Pharmacol.* **254**, 175-181.
779. Afework, M., Tomlinson, A. & Burnstock, G. (1994). Distribution and colocalization of nitric oxide synthase and NADPH-diaphorase in adrenal gland of developing, adult and aging Sprague-Dawley rats. *Cell Tissue Res.* **276**, 133-141.
780. Siou, G., Belai, A. & Burnstock, G. (1994). A developmental study of the localization of NADPH-diaphorase in the ganglionated plexus of the guinea-pig gall bladder. *Cell Tissue Res.* **276**, 61-68.
781. Burnstock, G., Fischer, B., Hoyle, C.H.V., Maillard, M., Ziganshin, A.U., Brizzolara, A.L., von Isakovics, A., Boyer, J.L., Kendall Harden, T. & Jacobson, K.A. (1994). Structure activity relationships for derivatives of adenosine 5'-triphosphate as agonists at P₂ purinoceptors: heterogeneity within P_{2X} and P_{2Y} subtypes. *Drug Dev. Res.* **31**, 206-219.
- *782. Milner, P. & Burnstock, G. (1994). Neurotransmitters in the gut. In: *Constipation and related disorders: Pathophysiology and management in adults and children*. Eds. M. Kamm. & J. Lennard-Jones. Wrightson Biomedical Publishing Ltd, Hampshire, UK. pp. 41-49.

783. Maynard, K.I. & Burnstock, G. (1994). Evoked noradrenaline release in the rabbit ear artery: enhancement by purines, attenuation by neuropeptide Y and lack of effect of calcitonin gene-related peptide. *Br. J. Pharmacol.* **112**, 123-126.
- *784. Bodin, P., Loesch, A., Milner, P. & Burnstock, G. (1994). Effect of increased flow on release of vasoactive substances from vascular endothelial cells. In: *The Society of Experimental Biology Seminar Series 54: Biomechanics and Cells. Part I. Soft Tissue*. Eds. F. Lyall & A.J. El Haj, Cambridge University Press, Cambridge. pp. 37-60.
785. Crowe, R., Parkhouse, N., McGrouther, D. & Burnstock, G. (1994). Neuropeptide-containing nerves in painful hypertrophic human scar tissue. *Br. J. Dermatol.* **130**, 444-452.
786. Brauer, M.M., Lincoln, J., Sarnar, S., Blundell, D., Milner, P., Passaro, M. & Burnstock, G. (1994). Maturation changes in sympathetic and sensory innervation of the rat uterus: effects of neonatal capsaicin treatment. *Int. J. Dev. Neurosci.* **12**, 157-171.
787. Corr, L. & Burnstock, G. (1994). Analysis of P2-purinoceptor subtypes on the smooth muscle and endothelium of rabbit coronary artery. *J. Cardiovasc. Pharmacol.* **23**, 709-715.
788. Vials, A. & Burnstock, G. (1994). Differential effects of ATP- and 2-methylthioATP-induced relaxation in guinea pig coronary vasculature. *J. Cardiovasc. Pharmacol.* **23**, 757-764.
789. Kasakov, L., Belai, A., Vlaskovska, M. & Burnstock, G. (1994). Noradrenergic-nitric interactions in the rat anococcygeus muscle: evidence for postjunctional modulation by nitric oxide. *Br. J. Pharmacol.* **112**, 403-410.
790. Rubino, A. & Burnstock, G. (1994). Recovery after dietary vitamin E supplementation of impaired endothelial function in vitamin E-deficient rats. *Br. J. Pharmacol.* **112**, 515-518.
791. Tay, S.S.W., Moules, E.W. & Burnstock, G. (1994). Colocalisation of NADPH-diaphorase with nitric oxide synthase and vasoactive intestinal polypeptide in newborn pancreatic neurons. *J. Anat.* **184**, 545-552.
792. Dikranian, K., Loesch, A. & Burnstock, G. (1994). Localisation of nitric oxide synthase and its colocalisation with vasoactive peptides in coronary and femoral arteries. An electron microscope study. *J. Anat.* **184**, 583-590.
793. Ationu, A., Hassall, C., Moules, E., Patton, M., Singer, D.R.J., Burnstock, G. & Carter, N.D. (1994). Secretion of atrial and brain natriuretic peptides from human cardiac atrial explants in culture: effect of dynorphin. *Cardioscience* **5**, 81-85.
794. Bo, X., Fischer, B., Maillard, M., Jacobson, K.A. & Burnstock, G. (1994). Comparative studies on the affinities of ATP derivatives for P2X-purinoceptors in rat urinary bladder. *Br. J. Pharmacol.* **112**, 1151-1159.
- *795. Milner, P. & Burnstock, G. (1994). Trophic factors and the control of smooth muscle development and innervation. Volume 1. In: *Airways Smooth Muscle: Development and Regulation of Contractility*. Eds. D. Raeburn & M.A. Giembycz, Birkhauser Verlag, Switzerland. pp. 1-39.

- *796. Ziganshin, A.U., Hoyle, C.H.V. & Burnstock, G. (1994). Ecto-enzymes and metabolism of extracellular ATP. *Drug Dev. Res.* **32**, 134-146.
797. Ralevic, V., Edvinsson, L. & Burnstock, G. (1994). Inhibition of neuropeptide Y-induced augmentation of noradrenaline-induced vasoconstriction by D-myo-inositol 1,2,6-trisphosphate in the rat mesenteric arterial bed. *Acta. Physiol. Scand.* **151**, 309-317.
798. Tay, S.S.W. & Burnstock, G. (1994). Localization of age-related changes in NADPH-diaphorase activity in pancreatic neurones. *Neuroscience* **615**, 597-602.
799. Fredholm, B.B., Abbracchio, M.P., Burnstock, G., Daly, J.W., Harden, T.K., Jacobson, K.A., Leff, P. & Williams, M. (1994). VI. Nomenclature and classification of purinoceptors. *Pharmacol. Rev.* **46**, 143-156.
800. Hopker, V.H., Saffrey, M.J. & Burnstock, G. (1994). Myenteric plexus explants promote neurite elongation and survival of striatal neurons in vitro. *Brain Res.* **648**, 332-336.
801. Inoue, K., Watano, T., Koizumi, S., Nakazawa, K. & Burnstock, G. (1994). Dual modulation by adenosine of ATP-activated channels through GTP-binding proteins in rat pheochromocytoma PC12 cells. *Eur. J. Pharmacol.* **268**, 223-229.
802. Stones, R.W., Beard, R.W. & Burnstock, G. (1994). Pharmacology of the human ovarian vein: responses to putative neurotransmitters and endothelin-1. *Br. J. Obs. Gynae.* **101**, 701-706.
- *803. Hoyle, C.H.V., Lincoln, J. & Burnstock, G. (1994). Neural control of pelvic organs. In: *Handbook of Neuro-Urology*. Ed. D.N.Rushton, Marcel Dekker, Inc. New York. pp. 1-54.
804. Bo, X. & Burnstock, G. (1994). Distribution of [³H]α,β-methylene ATP binding sites in rat brain and spinal cord. *Neuroreport* **5**, 1601-1604.
- *805. Allen, T.G.J., Hassall, C.J.S. & Burnstock, G. (1994). Mammalian intrinsic cardiac neurons in cell culture. In: *Neurocardiology*. Eds. J.A. Armour & J.L. Ardell, Oxford University Press, Oxford. pp. 115-138.
806. Saffrey, M.J. & Burnstock, G. (1994). Growth factors and the development and plasticity of the enteric nervous system. *J. Auton. Nerv. Syst.* **49**, 183-196.
807. Münch, G., Lincoln, J., Maynard, K., Belai, A. & Burnstock, G. (1994). Effects of acrylamide on cotransmission in perivascular sympathetic and sensory nerves. *J. Auton. Nerv. Syst.* **49**, 197-205.
808. Belai, A. & Burnstock, G. (1994). Evidence for coexistence of ATP and nitric oxide in non-adrenergic, non-cholinergic (NANC) inhibitory neurones in the rat ileum, colon and anococcygeus muscle. *Cell Tissue Res.* **278**, 197-200.
809. Stones, R.W., Turmaine, M., Beard, R.W. & Burnstock, G. (1994). The fine structure of the human ovarian vein. *J. Anat.* **185**, 285-294.

810. Kirkpatrick, K.A. & Burnstock, G. (1994). Release of endogenous ATP from the vasa deferentia of the rat and guinea-pig by the indirect sympathomimetic tyramine. *J. Auton. Pharmacol.* **14**, 325-335.
811. Windscheif, U., Ralevic, V., Bäumert, H.G., Mutschler, E., Lambrecht, G. & Burnstock, G. (1994). Vasoconstrictor and vasodilator responses to various agonists in the rat perfused mesenteric arterial bed: selective inhibition by PPADS of contractions mediated via P2X-purinoceptors. *Br. J. Pharmacol.* **113**, 1015-1021.
812. Soediono, P. & Burnstock, G. (1994). Contribution of ATP and nitric oxide to NANC inhibitory transmission in rat pyloric sphincter. *Br. J. Pharmacol.* **113**, 681-686.
813. Ziganshin, A.U., Hoyle, C.H.V., Ziganshina, L.E. & Burnstock, G. (1994). Effects of cyclopiazonic acid on contractility and ecto-ATPase activity in guinea-pig urinary bladder and vas deferens. *Br. J. Pharmacol.* **113**, 669-674.
814. Tew, E.M.M., Anderson, P.N., Saffrey, M.J. & Burnstock, G. (1994). Transplantation of the postnatal rat myenteric plexus into the adult rat corpus striatum: an electron microscopic study. *Exp. Neurol.* **129**, 120-129.
815. Brauer, M.M., Lincoln, J., Milner, P., Sarter, S., Blundell, D., Passaro, M., Corbacho, A. & Burnstock, G. (1994). Plasticity of autonomic nerves: differential effects of long-term guanethidine sympathectomy on the sensory innervation of the rat uterus during maturation. *Int. J. Dev. Neurosci.* **12**, 579-586.
816. Abbracchio, M. & Burnstock, G. (1994). Purinoceptors: are there families of P2X and P2Y purinoceptors? *Pharmacol. Ther.* **64**, 445-475.
- *817. Burnstock, G. & Ralevic, V. (1994). New insights into the local regulation of blood flow by perivascular nerves and endothelium. *Br. J. Plast. Surg.* **47**, 527-543.
- *818. Burnstock, G. (1994). (Series Editor). *The Autonomic Nervous System. Volume 4 Comparative Physiology and Evolution of the Autonomic Nervous System*. Eds. S. Nilsson & S. Holmgren. Harwood Academic Publishers, Switzerland, pp. 1-376.
819. Saffrey, M.J., Hassall, C.J.S., Moules, E.W. & Burnstock, G. (1994). NADPH diaphorase and nitric oxide synthase are expressed by the majority of intramural neurons in the neonatal guinea pig urinary bladder. *J. Anat.* **185**, 487-495.
820. Dikranian, K., Tomlinson, A., Loesch, A., Winter, R. & Burnstock, G. (1994). Increase in immunoreactivity to endothelin-1 in the mucosal vasculature and epithelium of the large intestine during chronic hypoxia. *J. Anat.* **185**, 609-615.
- *821. Hoyle, C.H.V. & Burnstock, G. (1994). The peripheral nervous system. In: *The Encyclopedia of Molecular Biology*. Ed. J. Kendrew, Blackwell Scientific Publications, Oxford. pp. 807-810.
822. Knight, G.E. & Burnstock, G. (1995). Responses of the aorta of the garter snake (*Thamnophis sirtalis parietalis*) to purines. *Br. J. Pharmacol.* **114**, 41-48.
823. Ziganshin, A.U., Ziganshina, L.E., Hoyle, C.H.V. & Burnstock, G. (1995). Effects of divalent cations and La³⁺ on contractility and ecto-ATPase activity in the guinea-pig urinary bladder. *Br. J. Pharmacol.* **114**, 632-639.

824. Belai, A., Cooper, S. & Burnstock, G. (1995). Effect of age on NADPH-diaphorase-containing myenteric neurones of rat ileum and proximal colon. *Cell Tissue Res.* **279**, 379-383.
825. Ziganshin, A.U., Ziganshina, L.E., King, B.F. & Burnstock, G. (1995). Characteristics of ecto-ATPase of *Xenopus* oocytes and the inhibitory actions of suramin on ATP breakdown. *Pflügers Arch.* **429**, 412-418.
826. Hasséssian, H. & Burnstock, G. (1995). Interacting roles of nitric oxide and ATP in the pulmonary circulation of the rat. *Br. J. Pharmacol.* **114**, 846-850.
827. Saiag, B., Bodin, P., Shacoori, V., Catheline, M., Rault, B. & Burnstock, G. (1995). Uptake and flow-induced release of uridine nucleotides from isolated vascular endothelial cells. *Endothelium* **2**, 279-285.
- *828. Lincoln, J., Hoyle, C.H.V. & Burnstock, G. (1995). Transmission: Nitric Oxide. In: *The Autonomic Nervous System, Volume 1 (reprinted) : Autonomic Neuroeffector Mechanisms*. Eds. G. Burnstock & C.H.V. Hoyle, Harwood Academic Publishers, Switzerland. pp. 509-539.
- *829. Milner, P. & Burnstock, G. (1995). Neurotransmitters in the autonomic nervous system. In: *Handbook of Autonomic Nervous System Dysfunction*. Ed. A.D. Korczyn, Marcel Dekker, New York. pp. 5-32.
- *830. Ralevic, V. & Burnstock, G. (1995). Neuropeptides in blood pressure control. In: *Hypertension: Pathophysiology, Diagnosis and Management. 2nd edn*. Eds. J.H. Laragh & B.M. Brenner, Raven Press, NY. pp. 801-831.
831. Loesch, A. & Burnstock, G. (1995). Ultrastructural localization of nitric oxide synthase and endothelin in coronary and pulmonary arteries of newborn rats. *Cell Tissue Res.* **279**, 475-483.
832. Stones, R.W., Loesch, A., Beard, R.W. & Burnstock, G. (1995). Substance P: endothelial localization and pharmacology in the human ovarian vein. *Obs. Gynaec.* **85**, 273-278.
833. Ziganshin, A.U., Berdnikov, E.A., Ziganshina, L.E., Tantasheva, F.R., Hoyle, C.H.V. & Burnstock, G. (1995). Effects of α,β -unsaturated sulphones and phosphonium salts on ecto-ATPase activity and contractile responses mediated via P2X-purinoceptors. *Gen. Pharmacol.* **26**, 527-532.
834. Ralevic, V., Hoyle, C.H.V. & Burnstock, G. (1995). Pivotal role of phosphate chain length in vasoconstrictor *versus* vasodilator actions of adenine dinucleotides in rat mesenteric arteries. *J. Physiol.* **483**, 703-713.
835. Bodin, P. & Burnstock, G. (1995). Synergistic effect of acute hypoxia on flow-induced release of ATP from cultured endothelial cells. *Experientia* **51**, 256-259.
836. Schäfer, K., Saffrey, M.J. & Burnstock, G. (1995). Trophic actions of 2-chloroadenosine and bFGF on cultured myenteric neurones. *Neuroreport* **6**, 937-941.
837. Sexton, A.J., Loesch, A., Turmaine, M., Miah, S. & Burnstock, G. (1995). Nitric oxide and human umbilical vessels: pharmacological and immunohistochemical studies. *Placenta* **16**, 277-288.

838. Mockett, B.G., Bo, X., Housley, G.D., Thorne, P.R. & Burnstock, G. (1995). Autoradiographic labelling of P2 purinoceptors in the guinea-pig cochlea. *Hear. Res.* **84**, 177-193.
- *839. Burnstock, G. (1995). Receptors for ATP at peripheral neuroeffector junctions. In: *Adenosine and Adenine Nucleotides: from Molecular Biology to Integrative Physiology*. Eds. L. Belardinelli & A. Pelleg, Kluwer Academic Publishers, Norwell, MA, USA. pp. 289-295.
- *840. Abbracchio, M.P., Ceruti, S., Burnstock, G. & Cattabeni, F. (1995). Purinoceptors on glial cells of the central nervous system: functional and pathologic implications. In: *Adenosine and Adenine Nucleotides: from Molecular Biology to Integrative Physiology*. Eds. L. Belardinelli & A. Pelleg, Kluwer Academic Publishers, Norwell, MA, USA. pp. 271-280.
- *841. Jacobson, K.A., Fischer, B., Maillard, M., Boyer, J.L., Hoyle, C.H.V., Kendall-Harden, T. & Burnstock, G. (1995). Novel ATP agonists reveal receptor heterogeneity within P_{2X} and P_{2Y} subtypes. In: *Adenosine and Adenine Nucleotides: from Molecular Biology to Integrative Physiology*. Eds. L. Belardinelli & A. Pelleg, Kluwer Academic Publishers, Norwell, MA, USA. pp. 149-156.
842. Belai, A., Wheeler, H. & Burnstock, G. (1995). Innervation of the rat gastrointestinal sphincters: changes during development and aging. *Int. J. Dev. Neurosci.* **13**, 81-95.
843. Ralevic, V., Milner, P. & Burnstock, G. (1995). Augmented flow-induced endothelin release from the rat mesenteric arterial bed after long-term sympathectomy. *Endothelium* **3**, 67-73.
844. Speakman, C.T.M., Hoyle, C.H.V., Kamm, M.A., Swash, M., Henry, M.M., Nicholls, R.J. & Burnstock, G. (1995). Abnormal internal anal sphincter fibrosis and elasticity in fecal incontinence. *Dis. Colon Rectum* **38**, 407-410.
845. Rubino, A., Loesch, A., Goss-Sampson, M.A., Milla, P. & Burnstock, G. (1995). Effects of vitamin E deficiency on vasomotor activity and ultrastructural organisation of rat thoracic aorta. *Br. J. Pharmacol.* **115**, 415-420.
846. Höpker, V., Saffrey, M.J. & Burnstock, G. (1995). The neuritogenic effect of myenteric plexus on striatal neurones in co-culture involves nitric oxide. *Neuroreport* **6**, 1153-1156.
847. Rubino, A., Ralevic, V. & Burnstock, G. (1995). Contribution of P₁ (A_{2b} subtype) and P₂-purinoceptors to the control of vascular tone in the rat isolated mesenteric arterial bed. *Br. J. Pharmacol.* **115**, 648-652.
848. Afework, M. & Burnstock, G. (1995). Colocalization of neuropeptides and NADPH-diaphorase in the intra-adrenal neuronal cell bodies and fibres of the rat. *Cell Tissue Res.* **280**, 291-295.
849. Afework, M., Ralevic, V. & Burnstock, G. (1995). The intra-adrenal distribution of intrinsic and extrinsic nitrergic nerve fibres in the rat. *Neurosci. Lett.* **190**, 109-112.

850. Milner, P., Bodin, P., Loesch, A. & Burnstock, G. (1995) Interactions between sensory perivascular nerves and the endothelium in brain microvessels. *Int. J. Microcirc.* **15**, 1-9.
851. Sosunov, A.A., Hassall, C.J.S., Loesch, A., Turmaine, M. & Burnstock, G. (1995). Ultrastructural investigation of nitric oxide synthase-immunoreactive nerves associated with coronary blood vessels of rat and guinea-pig. *Cell Tissue Res.* **280**, 575-582.
852. Knight, G.E., Brizzolara, A.L., Soediono, P., Karoon, P. & Burnstock, G. (1995). Chronic ethanol consumption affects cholinceptor- and purinoceptor- mediated contractions of the isolated rat bladder. *Alcohol* **12**, 183-188.
853. Milner, P., Lincoln, J., Belai, A. & Burnstock, G. (1995). Plasticity in the myenteric plexus of the rat ileum after long-term sympathectomy. *Int. J. Dev. Neurosci.* **13**, 385-392.
854. Milner, P., Crowe, R., Fernyhough, P., Diemel, L.T., Tomlinson, D.R. & Burnstock, G. (1995). Nerve growth factor treatment of adult rat selectively enhances innervation of urinogenital tract rather than vascular smooth muscle. *Int. J. Dev. Neurosci.* **13**, 393-401.
855. Tew, E.M.M., Fearon, A., Anderson, P.N. & Burnstock, G. (1995). Tyrosine hydroxylase-containing fibres extend from the rat corpus striatum into grafts of muscularis externa and myenteric plexus. *Neurosci. Lett.* **194**, 33-36.
856. Ralevic, V., Karoon, P. & Burnstock, G. (1995). Long-term sensory denervation by neonatal capsaicin treatment augments sympathetic neurotransmission in rat mesenteric arteries by increasing levels of norepinephrine and selectively enhancing postjunctional actions. *J. Pharmacol. Exp. Ther.* **274**, 64-71.
857. Meghji, P. & Burnstock, G. (1995). Inhibition of extracellular ATP degradation in endothelial cells. *Life Sci.* **57**, 763-771.
858. Dowd, P., Goldsmith, P., Bull, H., Burnstock, G., Foreman, J. & Marshall, I. (1995). Grand round: Raynaud's phenomenon. *Lancet* **346**, 283-290.
- *859. Burnstock, G. (1995) Current state of purinoceptor research. *Pharm. Acta Helv.* **69**, 231-242.
860. Windscheif, U., Pfaff, O., Ziganshin, A.U., Hoyle, C.H.V., Bäumert, H.G., Mutschler, E., Burnstock, G. & Lambrecht, G. (1995). Inhibitory action of PPADS on the relaxant responses to adenine nucleotides or electrical field stimulation in guinea-pig taenia-coli and rat duodenum. *Br. J. Pharmacol.* **115**, 1509-1517.
861. Crowe, R., Noble, J., Robson, T., Soediono, P., Milroy, E.J.G. & Burnstock, G. (1995). An increase of neuropeptide Y but not nitric oxide synthase-immunoreactive nerves in the bladder neck from male patients with bladder-neck dyssynergia. *J. Urol.* **154**, 1231-1236.
862. Afework, M. & Burnstock, G. (1995). Calretinin immunoreactivity in adrenal glands of developing, adult and ageing Sprague-Dawley rats. *Int. J. Dev. Neurosci.* **13**, 515-521.

863. Karoon, P., Rubino, A. & Burnstock, G. (1995). Enhanced sympathetic neurotransmission in the tail artery of 1,3-dipropyl-8-sulfophenylxanthine (DPSPX)-treated rats. *Br. J. Pharmacol.* **116**, 1918-1922.
864. Hoyle, C.H.V., Ralevic, V., Lincoln, J., Knight, G.E., Goss-Sampson, M.A., Milla, P.J. & Burnstock, G. (1995). Effects of vitamin E deficiency on autonomic neuroeffector mechanisms in the rat caecum, vas deferens and urinary bladder. *J. Physiol.* **487**, 773-786.
865. Hassall, C.J.S., James, S. & Burnstock, G. (1995). A subpopulation of intracardiac neurons from the guinea pig heart expresses substance P binding sites. *Cardioscience* **6**, 157-163.
866. Bates, T.E., Loesch, A., Burnstock, G. & Clark, J.B. (1995). Immunocytochemical evidence for a mitochondrially located nitric oxide synthase in brain and liver. *Biochem. Biophys. Res. Commun.* **213**, 896-900.
867. Balaskas, C., Saffrey, M.J. & Burnstock, G. (1995). Distribution and colocalization of NADPH-diaphorase activity, nitric oxide synthase immunoreactivity and VIP immunoreactivity in the newly hatched chicken gut. *Anat. Rec.* **243**, 10-18.
- *868. Burnstock, G. (1995). (Series Editor). *The Autonomic Nervous System. Volume 5. Disorders of the Autonomic Nervous System*. Eds. D. Robertson & I. Biaggioni. Harwood Academic Publishers, Switzerland, pp. 1-444.
- *869. Burnstock, G. (1995). (Series Editor). *The Autonomic Nervous System. Volume 6. Autonomic Ganglia*. Ed. E.M. McLachlan. Harwood Academic Publishers, Switzerland, pp. 1-518.
870. Bo, X. & Burnstock, G. (1995). Characterization and autoradiographic localization of [³H]α,β-methylene adenosine 5'-triphosphate binding sites in human urinary bladder. *Br. J. Urol.* **76**, 297-302.
871. Ziganshin, A.U., Ziganshina, L.E., Bodin, P., Bailey, D. & Burnstock, G. (1995). Effects of P2-purinoceptor antagonists on ecto-nucleotidase activity of guinea-pig vas deferens cultured smooth muscle cells. *Biochem. Mol. Biol. Intl.* **36**, 863-869.
872. Balaskas, C., Saffrey, M.J. & Burnstock, G. (1995). Distribution of NADPH-diaphorase activity in the embryonic chicken gut. *Anat. Embryol.* **192**, 239-245.
873. Chen, C.-C., Akopian, A.N., Sivilotti, L., Colquhoun, D., Burnstock, G. & Wood, J.N. (1995). A subset of sensory neurons express a novel P2X receptor. *Nature* **377**, 428-431.
874. Rubino, A. & Burnstock, G. (1995). Changes in sympathetic neurotransmission and adrenergic control of cardiac contractility during 1,3-dipropyl-8-sulfophenylxanthine-induced hypertension. *J. Pharmacol. Exp. Ther.* **275**, 422-428.
875. Abbracchio, M.P., Ceruti, S., Barbieri, D., Franceschi, C., Malorni, W., Biondo, L., Burnstock, G. & Cattabeni, F. (1995). A novel action for adenosine: apoptosis of astroglial cells in rat brain primary cultures. *Biochem. Biophys. Res. Commun.* **213**, 908-915.

876. Ralevic, V., Dikranian, K. & Burnstock, G. (1995). Long-term sensory denervation does not modify endothelial function or endothelial substance P and nitric oxide synthase in rat mesenteric arteries. *J. Vasc. Res.* **32**, 320-327.
877. Ralevic, V., Belai, A. & Burnstock, G. (1995). Effects of streptozotocin-diabetes on sympathetic nerve, endothelial and smooth muscle function in the rat mesenteric arterial bed. *Eur. J. Pharmacol.* **286**, 193-199.
- *878. Hoyle, C.H.V. & Burnstock, G. (1995). Chapter 6. Criteria for defining enteric neurotransmitters. In: *Handbook of Methods in Gastrointestinal Pharmacology*. Ed. T.S. Gaginella, CRC Press, Boca Raton. pp. 123-140.
879. Aliev, G., Miah, S., Turmaine, M. & Burnstock, G. (1995). An ultrastructural and immunochemical study of thoracic aortic endothelium in aged Sprague-Dawley rats. *J. Submicrosc. Cytol. Pathol.* **27**, 477-490.
880. Bo, X., Zhang, Y., Nassar, M., Burnstock, G. & Schoepfer, R. (1995). A P2X purinoceptor cDNA conferring a novel pharmacological profile. *FEBS Lett.* **375**, 129-133.
881. Ralevic, V., Milla, P.J. & Burnstock, G. (1995). Effects of chronic vitamin E deficiency and a high polyunsaturated fatty acid diet on rat mesenteric arterial function. *Br. J. Pharmacol.* **116**, 3075-3081.
882. Ralevic, V., Milla, P.J. & Burnstock, G. (1995). Effects of chronic vitamin E deficiency on vascular function - a study of sympathetic nerves, smooth muscle and endothelium of the mesenteric arterial bed of the rat. *Br. J. Pharmacol.* **116**, 2983-2988.
- *883. Milner, P. & Burnstock, G. (1995). The autonomic nervous system (revision). In: *38th Edition of Grays Anatomy*. 38th edn. Eds. M.M. Berry, S.M. Standring & L.H. Bannister, Churchill Livingstone, Edinburgh. pp. 1292-1312.
884. Simon, J., Webb, T.E., King, B.F., Burnstock, G. & Barnard, E.A. (1995). Characterization of a recombinant P2Y purinoceptor. *Eur. J. Pharmacol. (Mol. Pharmacol.)* **291**, 281-289.
885. Abbracchio, M.P., Ceruti, S., Langfelder, R., Cattabeni, F., Saffrey, M.J. & Burnstock, G. (1995). Effects of ATP analogues and basic fibroblast growth factor on astroglial cell differentiation in primary cultures of rat striatum. *Int. J. Dev. Neurosci.* **13**, 685-693.
886. Hoyle, C.H.V., Posterino, A. & Burnstock, G. (1995). Pre- and postjunctional effects of diadenosine polyphosphates in the guinea-pig vas deferens. *J. Pharm. Pharmacol.* **47**, 926-931.
887. Bodin, P., Milner, P., Marshall, J. & Burnstock, G. (1995). Cytokines suppress the shear-stress stimulated release of vasoactive peptides from human endothelial cells. *Peptides* **16**, 1433-1438.
888. Ziganshin, A.U., Ralevic, V. & Burnstock, G. (1995). Contractility of urinary bladder and vas deferens after sensory denervation by capsaicin treatment of newborn rats. *Br. J. Pharmacol.* **114**, 166-170.

889. Brauer, M.M., Corbacho, A.M. & Burnstock, G. (1995). Effects of chronic and acute oestrogen treatment on the developing noradrenaline-containing nerves of the rat uterus. *Int. J. Dev. Neurosci.* **13**, 791-798.
- *890. Burnstock, G. (1995). Noradrenaline and ATP: cotransmitters and neuromodulators. *J. Physiol. Pharmacol.* **46**, 365-384.
- 890a. White, P.N., Thorne, P.R., Housley, G.D., Mockett, B.E., Billett, T.E. & Burnstock, G. (1995). Quinacrine staining of marginal cells in the stria vasculares of the guinea-pig cochlea: a possible source of extracellular ATP? *Hear. Res.* **90**, 97-105.
891. Ralevic, V., Hoyle, C.H.V., Goss-Sampson, M.A., Milla, P.J. & Burnstock, G. (1996). Effect of chronic vitamin E deficiency on sympathetic and sensorimotor function in rat mesenteric arteries. *J. Physiol.* **490**, 181-189.
892. Ashraf, S., Crowe, R., Loizidou, M.C., Turmaine, M., Taylor, I. & Burnstock, G. (1996). The absence of autonomic perivascular nerves in human colorectal liver metastases. *Br. J. Cancer* **73**, 349-359.
893. Neary, J., Rathbone, M., Cattabeni, F., Abbracchio, M. & Burnstock, G. (1996). Trophic actions of extracellular nucleotides and nucleosides on glial and neuronal cells. *Trends Neurosci.* **19**, 13-18.
894. King, B.F., Pintor, J., Wang, S., Ziganshin, A.U., Ziganshina, L.E. & Burnstock, G. (1996). A novel P1 purinoceptor activates an outward K⁺ current in follicular oocytes of *Xenopus laevis*. *J. Pharmacol. Exp. Ther.* **276**, 93-100.
895. Vials, A. & Burnstock, G. (1996). ATP release from the isolated perfused guinea pig heart in response to increased flow. *J. Vasc. Res.* **33**, 1-4.
896. Bates, T.E., Loesch, A., Burnstock, G. & Clark, J.B. (1996). Mitochondrial nitric oxide synthase: a ubiquitous regulator of oxidative phosphorylation? *Biochem. Biophys. Res. Commun.* **218**, 40-44.
897. Knight, G.E. & Burnstock, G. (1996). The effects of purine compounds on the isolated aorta of the frog *Rana temporaria*. *Br. J. Pharmacol.* **117**, 873-878.
898. Ziganshina, L., Ziganshin, A.U., Hoyle, C.H.V. & Burnstock, G. (1996). Acute paw oedema formation induced by ATP: Re-evaluation of the mechanisms involved. *Inflamm. Res.* **145**, 96-102.
899. Loesch, A. & Burnstock, G. (1996). Ultrastructural localization of nitric oxide synthase and endothelin in rat pulmonary artery and vein during postnatal development and ageing. *Cell Tissue Res.* **283**, 355-365.
900. Milner, P., Loesch, A. & Burnstock, G. (1996). Neonatal sensory denervation affects the expression of endothelial peptides in the adult rat pulmonary artery: more cells contain substance P and less contain endothelin. *Endothelium* **4**, 71-76.
901. Milner, P., Bodin, P. & Burnstock, G. (1996). Long-term guanethidine sympathectomy suppresses flow-induced release of ATP and endothelin from endothelial cells isolated from adult rat aorta. *J. Vasc. Res.* **33**, 139-145.

- *902. Burnstock, G. & Ralevic, V. (1996). Cotransmission. In: *The Pharmacology of Vascular Smooth Muscle*. Eds. C.J. Garland & J.A. Angus, Oxford University Press, Oxford. pp. 210-232.
903. King, B.F., Dacquet, C., Ziganshin, A.U., Weetman, D.F., Burnstock, G., Vanhoutte, P.M. & Spedding, M. (1996). Potentiation by 2,2'-pyridylisatogen tosylate of ATP-responses at a recombinant P2Y₁ purinoceptor. *Br. J. Pharmacol.* **117**, 1111-1118.
904. King, B.F., Ziganshina, L.E., Pintor, J. & Burnstock, G. (1996). Full sensitivity of P2X₂ purinoceptor to ATP revealed by changing extracellular pH. *Br. J. Pharmacol. (Special Report)* **117**, 1371-1373.
905. Ralevic, V. & Burnstock, G. (1996). Mesenteric arterial function in the rat in pregnancy: role of sympathetic and sensory-motor perivascular nerves, endothelium, smooth muscle, nitric oxide and prostaglandins. *Br. J. Pharmacol.* **117**, 1463-1470.
906. Milner, P. & Burnstock, G. (1996). Chronic sensory denervation reduces thrombin-stimulated endothelin release from aortic endothelial cells. *Experientia* **52**, 242-244.
907. Ralevic, V., Afework, M. & Burnstock, G. (1996). Vasoconstrictor function of the rat isolated perfused mesenteric arterial bed seven days after hypophysectomy. *J. Cardiovasc. Pharmacol.* **27**, 362-367.
908. Belai, A., Milner, P., Aberdeen, J. & Burnstock, G. (1996). Selective damage to sensorimotor perivascular nerves in the mesenteric vessels of diabetic rats. *Diabetes* **45**, 139-143.
909. Ralevic, V. & Burnstock, G. (1996). Relative contribution of endothelial P2U- and P2Y- purinoceptors to endothelium-dependent vasodilatation in the golden hamster isolated mesenteric arterial bed. *Br. J. Pharmacol.* **117**, 1797-1802.
910. Sexton, A.J., Loesch, A., Turmaine, M., Miah, S. & Burnstock, G. (1996). Electron-microscopic immunolabelling of vasoactive substances in human umbilical endothelial cells and their actions in early and late pregnancy. *Cell Tissue Res.* **284**, 167-175.
911. Sosunov, A.A., Hassall, C.J.S., Loesch, A., Turmaine, M. & Burnstock, G. (1996). Nitric oxide synthase-containing neurones and nerve fibres within cardiac ganglia of rat and guinea-pig: an electron-microscopic immunocytochemical study. *Cell Tissue Res.* **284**, 19-28.
912. Ziganshin, A.U., Ziganshina, L.E., King, B.F., Pintor, J. & Burnstock, G. (1996). Effects of P2-purinoceptor antagonists on degradation of adenine nucleotides by ecto-nucleotidases in folliculated oocytes of *Xenopus laevis*. *Biochem. Pharmacol.* **51**, 897-901.
913. Afework, M., Lincoln, J., Belai, A. & Burnstock, G. (1996). Increase in nitric oxide synthase and NADPH-diaphorase in the adrenal gland of streptozotocin-diabetic Wistar rats and its prevention by ganglioside. *Int. J. Dev. Neurosci.* **14**, 111-123.

914. Tew, E.M.M., Saffrey, M.J., Anderson, P.N. & Burnstock, G. (1996). NADPH-diaphorase containing enteric neurones survive for a year in the adult rat striatum. *Neuroreport* **7**, 958-960.
915. Ralevic, V. & Burnstock, G. (1996). Discrimination by PPADS between endothelial P2Y- and P2U-purinoceptors in the rat isolated mesenteric arterial bed. *Br. J. Pharmacol.* **118**, 428-434.
916. Ralevic, V., Mathie, R.T., Moore, K.P. & Burnstock, G. (1996). Vasoconstrictor responsiveness of the rat mesenteric arterial bed in cirrhosis. *Br. J. Pharmacol.* **118**, 435-441.
917. Belai, A. & Burnstock, G. (1996). Acrylamide-induced neuropathic changes in rat enteric nerves: similarities with effects of streptozotocin diabetes. *J. Auton. Nerv. Syst.* **58**, 56-62.
918. Zhao, M., Bo, X., Neely, C.F. & Burnstock, G. (1996). Characterization and autoradiographic localization of [³H] α,β -methylene ATP binding sites in cat urinary bladder. *Gen. Pharmacol.* **27**, 509-512.
919. Belai, A., Calcutt, N.A., Carrington, A.L., Diemel, L.T., Tomlinson, D.R. & Burnstock, G. (1996). Enteric neuropeptides in streptozotocin-diabetic rats; effects of insulin and aldose reductase inhibition. *J. Auton. Nerv. Syst.* **58**, 163-169.
920. Gorelova, E., Loesch, A., Bodin, P., Chadwick, L., Hamlyn, P.J. & Burnstock, G. (1996). Localisation of immunoreactive factor VIII, nitric oxide synthase, substance P, endothelin-1 and 5-hydroxytryptamine in human postmortem middle cerebral artery. *J. Anat.* **188**, 97-107.
921. Burnstock, G. (1996). A unifying purinergic hypothesis for the initiation of pain. *Lancet* **347**, 1604-1605.
- *922. Rubino, A. & Burnstock, G. (1996). Capsaicin-sensitive sensory-motor neurotransmission in the peripheral control of cardiovascular function. *Cardiovasc. Res.* **31**, 467-479.
- *923. Burnstock, G. (1996). P2 Purinoceptors: historical perspective and classification. In: *P2 Purinoceptors: Localization, Function and Transduction Mechanisms*. Ciba Foundation Symposium 198. John Wiley and Sons, Chichester. pp. 1-29.
- *924. Abbracchio, M.P., Ceruti, S., Bolego, C., Puglisi, L., Burnstock, G. & Cattabeni, F. (1996). Trophic roles of P2-purinoceptors in central nervous system astroglial cells. In: *P2 Purinoceptors: Localization, Function and Transduction Mechanisms*. Ciba Foundation Symposium 198. John Wiley and Sons, Chichester. pp. 142-148.
925. Hoyle, C.H.V., Stones, R.W., Robson, T., Whitley, K. & Burnstock, G. (1996). Innervation of vasculature and microvasculature of the human vagina by NOS and neuropeptide-containing nerves. *J. Anat.* **188**, 633-644.
- *926. Hoyle, C.H.V. & Burnstock, G. (1996). Purines. In: *Principles of Medical Biology*. Eds. E. Bittar & N. Bittar, JAI Press Inc. Greenwich, Connecticut. pp. 49-75.
927. Neely, C.F., Matot, I., Batra, V.K., Bo, X. & Burnstock, G. (1996). P2x purinoceptors in the feline pulmonary vascular bed: distribution and selective *in vivo* pharmacological probes. *Am. J. Physiol.* **270**, L889-L897.

928. Hoyle, C.H.V., Ziganshin, A.U., Pintor, J. & Burnstock, G. (1996). The activation of P1- and P2-purinoceptors in the guinea-pig left atrium by diadenosine polyphosphates. *Br. J. Pharmacol.* **118**, 1294-1300.
929. King, B.F., Wang, S. & Burnstock, G. (1996). P2 purinoceptor activated inward currents in folliculated oocytes of *Xenopus laevis*. *J. Physiol.* **494**, 17-28.
930. Rubino, A. & Burnstock, G. (1996). Evidence for a P2-purinoceptor mediating vasoconstriction by UTP, ATP and related nucleotides in the isolated pulmonary vascular bed of the rat. *Br. J. Pharmacol.* **118**, 1415-1420.
931. Knight, G.E. & Burnstock, G. (1996). The involvement of the endothelium in the relaxation of the leopard frog (*Rana pipiens*) aorta in response to acetylcholine. *Br. J. Pharmacol.* **118**, 1518-1522.
932. Bodin, P. & Burnstock, G. (1996). ATP-stimulated release of ATP by human endothelial cells. *J. Cardiovasc. Pharmacol.* **27**, 872-875.
933. Ralevic, V., Rubino, A. & Burnstock, G. (1996). Augmented sensory-motor vasodilatation of the rat mesenteric arterial bed after chronic infusion of the P1-purinoceptor antagonist, DPSPX. *Br. J. Pharmacol.* **118**, 1675-1680.
934. Stones, R.W., Vials, A., Milner, P., Beard, R.W. & Burnstock, G. (1996). Release of vasoactive agents from the isolated perfused human ovary. *Eur. J. Obs. Gynaec. Reprod. Biol.* **67**, 191-196.
935. Aliev, G., Ralevic, V. & Burnstock, G. (1996). Depression of endothelial nitric oxide synthase but increased expression of endothelin-1 immunoreactivity in rat thoracic aortic endothelium associated with long-term, but not short term, sympathectomy. *Circ. Res.* **72**, 317-323.
- *936. Burnstock, G. (1996). Purinergic neurotransmission. In: *Primer on the Autonomic Nervous System*. Ed. D. Robertson, P.A. Low & R.J. Polinsky, Academic Press, San Diego, California. pp. 99-104.
937. Höpker, V., Saffrey, M.J. & Burnstock, G. (1996). Neurite outgrowth of striatal neurons in vitro: involvement of purines in the growth promoting effect of myenteric plexus explants. *Int. J. Dev. Neurosci.* **14**, 439-451.
938. Ziganshin, A.U., Ziganshina, L.E., King, B.F. & Burnstock, G. (1996). Differential degradation of extracellular adenine nucleotides by folliculated oocytes of *Xenopus laevis*. *Comp. Biochem. Physiol.* **114A**, 335-340.
- *939. Burnstock, G. & Wood, J.N. (1996). Purinergic receptors: their role in nociception and primary afferent neurotransmission. *Curr. Opin. Neurobiol.* **6**, 526-532.
940. Webb, T.E., Henderson, D., King, B.F., Wang, S., Simon, J., Bateson, A.N., Burnstock, G. & Barnard, E.A. (1996). A novel G protein-coupled P2 purinoceptor (P2Y₃) activated preferentially by nucleoside diphosphates. *Mol. Pharmacol.* **50**, 258-265.
- *941. Burnstock, G. (1996). (Guest Editor). Purinergic Neurotransmission. *Semin. Neurosci.* **8**, 171-257.

- *942. Lambrecht, G., Ardanuy, U., Bäumert, H.G., Bo, X., Hoyle, C.H.V., Nickel, P., Pfaff, O., Ralevic, V., Windscheif, U., Ziganshin, A.U., Ziyal, R., Mutschler, E. & Burnstock, G. (1996). Design and Pharmacological characterization of selective P2-purinoceptor antagonists. In: *Perspectives in Receptor Research (10th Camerino Symposium - Proceedings)*. Eds. D. Giardina, A. Piergenteli & M. Pignini, Elsevier, Amsterdam. pp. 337-350.
943. Pintor, J., King, B.F., Ziganshin, A.U., Miras-Portugal, M.T. & Burnstock, G. (1996). Diadenosine polyphosphate-activated inward and outward currents in follicular oocytes of *Xenopus laevis*. *Life Sci.* **59**, PL179-PL184.
944. King, B.F., Neary, J.T., Zhu, Q., Wang, S., Norenberg, M.D. & Burnstock, G. (1996). P2 purinoceptors in rat cortical astrocytes: expression, calcium-imaging and signalling studies. *Neuroscience* **74**, 1187-1196.
945. Rubino, A. & Burnstock, G. (1996). Possible role of diadenosine polyphosphates as modulators of cardiac sensory-motor neurotransmission in guinea-pigs. *J. Physiol.* **495**, 515-523.
946. Ventura, S. & Burnstock, G. (1996). Variation in nitric oxide synthase-immunoreactive nerve fibres with age and along the length of the vas deferens in the rat. *Cell Tissue Res.* **285**, 427-434.
947. Vallejo, A.I., Bo, X. & Burnstock, G. (1996). P2Y-purinoceptors in gastric gland plasma membranes. *Eur. J. Pharmacol.* **312**, 209-214.
948. Pinna, C., Ventura, S., Puglisi, L. & Burnstock, G. (1996). A pharmacological and histochemical study of hamster urethra and the role of urothelium. *Br. J. Pharmacol.* **119**, 655-662.
- *949. Burnstock, G. & King, B.F. (1996). Numbering of cloned P2 purinoceptors. *Drug Dev. Res.* **38**, 67-71.
950. Pintor, J., King, B.F., Miras-Portugal, M.T. & Burnstock, G. (1996). Selectivity and activity of adenine dinucleotides at recombinant P2X₂ and P2Y₁ purinoceptors. *Br. J. Pharmacol.* **119**, 1006-1012.
951. Ralevic, V., Aliev, G. & Burnstock, G. (1996). Mesenteric and hepatic vascular reactivity in Donryu rats with and without a cholesterol-supplemented diet. *Eur. J. Pharmacol.* **313**, 221-227.
- *952. Burnstock, G. (1996). (Series Editor). *The Autonomic Nervous System. Volume 7. Autonomic Control of the Respiratory System*. Ed. P.J. Barnes. Harwood Academic Publishers, Switzerland, pp. 1-349.
- *953. Burnstock, G. (1996). (Series Editor). *The Autonomic Nervous System. Volume 8. Nervous Control of Blood Vessels*. Eds. T. Bennett & S. Gardiner. Harwood Academic Publishers, Switzerland, pp. 1-576.
- *954. Ralevic, V. & Burnstock, G. (1996). Interactions between perivascular nerves and endothelial cells in control of local vascular tone. In: *The Autonomic Nervous System. Volume 8. Nervous Control of Blood Vessels*. Eds. T. Bennett & S. Gardiner, Harwood Academic Publishers, Switzerland. pp. 135-175.

- *955. Burnstock, G. (1996). (Series Editor). *The Autonomic Nervous System. Volume 9. Nervous Control of the Heart*. Eds. J.T. Shepherd & S.F. Vatner. Harwood Academic Publishers, Switzerland, pp. 1-412.
- *956. Rubino, A., Hassall, C.J.S. & Burnstock, G. (1996). Autonomic control of the myocardium: Non-adrenergic non-cholinergic (NANC) mechanisms. In: *The Autonomic Nervous System. Volume 9. Nervous Control of the Heart*. Eds. J.T. Shepherd & S. Vatner, Harwood Academic Publishers, Switzerland. pp. 139-171.
- *957. Burnstock, G. (1996). (Series Editor). *The Autonomic Nervous System. Volume 10. Autonomic-Endocrine Interactions*. Ed. K. Unsicker. Harwood Academic Publishers, Switzerland, pp. 1-474.
958. Ralevic, V. & Burnstock, G. (1996). Effects of short- and long-term sympathectomy on vasoconstrictor responses of the rat mesenteric arterial bed. *Br. J. Pharmacol.* **119**, 1347-1354.
959. Spencer, S.P., Milner, P., Bodin, P. & Burnstock, G. (1996). Modulation of endothelin release by vasoactive peptides localised in human umbilical vein endothelial cells. *Endothelium* **4**, 309-317.
960. Ralevic, V. & Burnstock, G. (1996). Effects of hypophysectomy on purinergic and noradrenergic contractility of the rat vas deferens. *J. Auton. Pharmacol.* **16**, 191-196.
961. Sexton, A.J., Turmaine, M., Cai, W.Q. & Burnstock, G. (1996). A study of the ultrastructure of developing human umbilical vessels. *J. Anat.* **188**, 75-85.
962. Mathie, R.T., Ralevic, V., Moore, K.P. & Burnstock, G. (1996). Mesenteric vascular responses in cirrhotic rats: A role for nitric oxide? *Hepatology* **23**, 130-136.
963. Afework, M. & Burnstock, G. (1996). Effect of reserpine treatment and hypophysectomy on the nitric oxide synthase immunoreactivity and NADPH-diaphorase staining in the rat adrenal gland. *Anat. Rec.* **246**, 545-548.
964. Zhao, M., Bo, X. & Burnstock, G. (1996). Distribution of [³H] α,β -methylene ATP binding sites in pulmonary blood vessels of different species. *Pulm. Pharmacol.* **9**, 167-174.
965. Crowe, R., Vale, J., Trott, K.R., Soediono, P., Robson, T. & Burnstock, G. (1996). Radiation-induced changes in neuropeptides in the rat urinary bladder. *J. Urol.* **156**, 2062-2066.
- *966. Loesch, A. & Burnstock, G. (1996). Immunocytochemistry of vasoactive agents and nitric oxide synthase in vascular endothelial cells with emphasis on the cerebral blood vessels. *Cell Vision* **3**, 346-357.
967. Sala, A., Aliev, G.M., Rossini, G., Berti, F., Buccellati, C., Burnstock, G., Folco, G. & Maclouf, J. (1996). Morphological and functional changes of coronary vasculature caused by transcellular biosynthesis of sulfidopeptide leukotrienes in isolated heart of rabbit. *Blood* **87**, 1824-1832.
968. Loesch, A. & Burnstock, G. (1996). Ultrastructural study of perivascular nerve fibres and endothelial cells of the rat basilar artery immunolabelled with monoclonal

- antibodies to neuronal and endothelial nitric oxide synthase. *J. Neurocytol.* **25**, 525-534.
969. Mathie, R.T., Ralevic, V. & Burnstock, G. (1996). Portal vascular responsiveness to sympathetic stimulation and nitric oxide in cirrhotic rats. *J. Hepatol.* **25**, 90-97.
970. Gattuso, J.M., Hoyle, C.H.V., Milner, P., Kamm, M.A. & Burnstock, G. (1996). Enteric innervation in idiopathic megarectum and megacolon. *Int. J. Colorectal Dis.* **11**, 264-271.
- *971. Burnstock, G. (1996). Cotransmission with particular emphasis on the involvement of ATP. In: *Molecular Mechanisms of Neuronal Communication. A Tribute to Nils-Åke Hillarp*. Eds. K. Fuxe, T. Hökfelt, L. Olson, D. Ottoson, A. Dahlström & A. Björklund, Pergamon Press, Oxford. pp. 67-87.
972. Ren, L.M., Hoyle, C.H.V. & Burnstock, G. (1996). Developmental changes in sympathetic contraction of the circular muscle layer in the guinea-pig vas deferens. *Eur. J. Pharmacol.* **318**, 411-417.
973. Hill, B., Ralevic, V., Crowe, R. & Burnstock, G. (1996). Innervation and nitric oxide modulation of mesenteric arteries of the Golden hamster. *Eur. J. Pharmacol.* **317**, 275-283.
974. Burnstock, G. (1996). Development and perspectives of the purinoceptor concept. State of the Art Lecture, in Satellite Int. Soc. Hypert. Meeting Volume entitled "The Role of Adenosine and ATP in the Cardiovascular System". *J. Autonom. Pharmacol.* **16**, 295-302.
- *975. Burnstock, G. (1996). Purinoceptors: Ontogeny and Phylogeny. *Drug Dev. Res.* **39**, 204-242.
976. Neary, J.T. & Burnstock, G. (1996). Purinoceptors in the regulation of cell growth and differentiation. *Drug Dev. Res.* **39**, 407-412.
977. Franceschi, C., Abbracchio, M.P., Barbieri, D., Ceruti, S., Ferrari, D., Iliou, J.P., Rounds, S., Schubert, P., Schulse-Lohoff, E., Rassendren, F.A., Staub, M., Volonté, C., Wakade, A.R. & Burnstock, G. (1996). Purines and Cell Death. *Drug Dev. Res.* **39**, 442-449.
978. Fredholm, B.B., Burnstock, G., Harden, T.K. & Spedding, M. (1996). Receptor Nomenclature. *Drug Dev. Res.* **39**, 461-466.
979. St. Lambert, J.H., Thomas, T., Burnstock, G. & Spyer, K.M. (1997). A source of adenosine involved in cardiovascular responses to defence area stimulation. *Am. J. Physiol.* **272**, R195-R200.
980. Wildman, S.S., King, B.F. & Burnstock, G. (1997). Potentiation of ATP-responses at a recombinant P2X₂ receptor by neurotransmitters and related substances. *Br. J. Pharmacol.* **120**, 221-224.
981. Ren, L.M. & Burnstock, G. (1997). Prominent sympathetic purinergic vasoconstriction in the rabbit splenic artery: potentiation by 2,2'-pyridylisatogen tosylate. *Br. J. Pharmacol.* **120**, 530-536.

982. Loesch, A., Milner, P., Anglin, S., Crowe, R., Miah, S., McEwan, J.R. & Burnstock, G. (1997). Ultrastructural localisation of nitric oxide synthase, endothelin and binding sites of lectin (from *Bandeirea simplicifolia*) in the rat carotid artery after balloon catheter injury. *J. Anat.* **190**, 93-104.
983. Ziyal, R., Ziganshin, A.U., Nickel, P., Ardanuy, U., Mutschler, E., Lambrecht, G. & Burnstock, G. (1997). Vasoconstrictor responses via P2X-purinceptors are selectively antagonized by NF023 in rabbit isolated aorta and saphenous artery. *Br. J. Pharmacol.* **120**, 954-960.
984. Milner, P., Crowe, R., Loesch, A., Anglin, S., Burnstock, G. & McEwan, J. (1997). Neurocompensatory responses to balloon catheter-induced injury of the rat carotid artery. *J. Vasc. Res.* **34**, 31-40.
985. Burnstock, G. (1997). Commentary on paper by S. Hukovic (1961) entitled "Responses of the isolated sympathetic nerve-ductus deferens preparation of the guinea-pig". In: *Landmarks in Pharmacology*. Eds. A.T. Birmingham & D.A. Brown, Br. J. Pharmacol. (Suppl. to Vol. 120, Golden Jubilee 1946-1996), pp. 192-201.
986. Burnstock, G. (1997). Commentary on paper by G. Burnstock, G. Campbell, D. Satchell & A. Smythe (1970) entitled "Evidence that adenosine triphosphate or a related nucleotide is the transmitter substance released by non-adrenergic inhibitory nerves in the gut". In: *Landmarks in Pharmacology*. Eds. A.T. Birmingham & D.A. Brown, Br. J. Pharmacol. (Suppl. to Vol. 120, Golden Jubilee 1946-1996), pp. 334-357.
987. Fredholm, B.B., Abbracchio, M.P., Burnstock, G., Dubyak, G.R., Harden, T.K., Jacobson, K.A., Schwabe, U., Spedding, M. & Williams, M. (1997). Towards a revised nomenclature for adenosine and P2 receptors. *Trends Pharmacol. Sci.* **18**, 79-82.
988. Burnstock, G. (1997). A unifying purinergic hypothesis for the initiation of pain. *Analgesic Digest* **2**, 27-29.
989. Ziganshin, A.U., Ziganshina, L.E. & Burnstock, G. (1997). Pharmacological characterisation of receptors for ATP (Review). (In Russian). *Chemico-Pharmaceutical J.* **31**, 3-8.
- *990. Burnstock, G. (1997). (Series Editor). *The Autonomic Nervous System. Volume 11. Central Nervous Control of Autonomic Function*. Ed. D. Jordan. Harwood Academic Publishers, Switzerland, pp. 1-304.
991. Vials, A.J., Crowe, R. & Burnstock, G. (1997). A neuromodulatory role for neuronal nitric oxide in the rabbit renal artery. *Br. J. Pharmacol.* **121**, 213-220.
992. King, B., Chen, C., Akopian, A.N., Burnstock, G. & Wood, J.N. (1997). A role for calcineurin in the desensitization of the P2X₃ receptor. *Neuroreport* **8**, 1099-1102.
993. Bogdanov, Y.D., Dale, L., King, B.F., Whittock, N. & Burnstock, G. (1997). Early expression of a novel nucleotide receptor in the neural plate of *Xenopus* embryos. *J. Biol. Chem.* **272**, 12583-12590.
994. Shochina, M., Loesch, A., Rubino, A., Miah, S. & Burnstock, G. (1997). Immunoreactivity for nitric oxide synthase and endothelin in the coronary and basilar arteries of renal hypertensive rats. *Cell Tissue Res.* **288**, 509-516.

995. Belai, A., Boulos, P., Robson, T. & Burnstock, G. (1997). Neurochemical coding in the small intestine of patients with Crohn's disease. *Gut* **40**, 767-774.
996. Rubino, A., Ralevic, V. & Burnstock, G. (1997). Calcitonin gene-related peptide (CGRP)-evoked inotropism during hyper- and hypo-sensory-motor innervation in rat atria. *J. Auton. Pharmacol.* **17**, 121-127.
997. Shochina, M., Belai, A., Toole, L., Knight, G. & Burnstock, G. (1997). Neurochemical coding in the myenteric plexus of the upper gastrointestinal tract of hibernating hamsters. *Int. J. Dev. Neurosci.* **15**, 353-362.
998. Ralevic, V., Burrell, S., Kingdom, J. & Burnstock, G. (1997). Characterization of P2 receptors for purine and pyrimidine nucleotides in human placental cotyledons. *Br. J. Pharmacol.* **121**, 1121-1126.
999. King, B.F., Wildman, S.S., Ziganshina, L.E., Pintor, J. & Burnstock, G. (1997). Effects of extracellular pH on agonism and antagonism at a recombinant P2X₂ receptor. *Br. J. Pharmacol.* **121**, 1445-1453.
1000. Ralevic, V., Hill, B., Crowe, R., Knight, G. & Burnstock, G. (1997). Effects of hibernation on neural and endothelial control of mesenteric arteries of the golden hamster. *Am. J. Physiol.* **273**, H148-H155.
- *1001. Milner, P., Loesch, A. & Burnstock, G. (1997). Plasticity of expression of endothelial vasoactive agents. In: *Vascular Endothelium: Physiology, Pathology and Therapeutic Opportunities*. Eds. G.V.R. Born & C.J. Schwartz, Schattauer, Stuttgart. pp 243-260.
- *1002. Williams, M. & Burnstock, G. (1997). Purinergic neurotransmission and neuromodulation: a historical perspective. In: *Purinergic Approaches to Experimental Therapeutics*. Eds. K.A. Jacobson & M.F. Jarvis, Wiley-Liss, NY. pp.3-26.
1003. Ashraf, S., Loizidou, M., Crowe, R., Turmaine, M., Taylor, I. & Burnstock, G. (1997). Blood vessels in liver metastases from both sarcoma and carcinoma lack perivascular innervation and smooth muscle cells. *Clin. Exp. Metastasis* **15**, 484-498.
1004. Bolego, C., Ceruti, S., Brambilla, R., Puglisi, L., Cattabeni, F., Burnstock, G. & Abbracchio, M.P. (1997). Characterization of the signalling pathways involved in ATP- and basic fibroblast growth factor-induced astrogliosis. *Br. J. Pharmacol.* **121**, 1692-1699.
1005. Centemeri, C., Bolego, C., Abbracchio, M.P., Cattabeni, F., Puglisi, L., Burnstock, G. & Nicosia, S. (1997). Characterization of the Ca²⁺ responses evoked by ATP and other nucleotides in mammalian brain astrocytes. *Br. J. Pharmacol.* **121**, 1700-1706.
1006. Sosunov, A.A., Hassall, C.J.S., Loesch, A., Turmaine, M., Fehér, E. & Burnstock, G. (1997). Neuropeptide Y-immunoreactive intracardiac neurones, granule-containing cells and nerves associated with ganglia and blood vessels in rat and guinea-pig heart. *Cell Tissue Res.* **289**, 445-454.

1007. Schafer, K., Saffrey, M.J., Burnstock, G. & Mestres-Ventura, P. (1997). A new method for the isolation of myenteric plexus from the newborn rat gastrointestinal tract. *Brain Research Protocols* **1**, 109-113.
1008. Loesch, A., Turmaine, M., Loizidou, M., Crowe, R., Ashraf, S., Taylor, I. & Burnstock, G. (1997). Increase in immunoreactivity for endothelin-1 in blood vessels of rat liver metastases: experimental sarcoma and carcinoma. *J. Anat.* **191**, 291-299.
- *1009. Lincoln, J., Hoyle, C.H.V. & Burnstock, G. (1997). *Nitric Oxide in Health and Disease*. Cambridge University Press, Cambridge, pp. 1-355.
1010. Rubino, A., Ralevic, V. & Burnstock, G. (1997). Sympathetic neurotransmission in isolated rat atria following sensory-motor denervation by neonatal treatment with capsaicin. *J. Pharmacol. Exp. Ther.* **282**, 671-675.
- *1011. Burnstock, G. (1997). The past, present and future of purine nucleotides as signalling molecules. *Neuropharmacology* **36**, 1127-1139.
1012. Ventura, S. & Burnstock, G. (1997). Evidence against nitrenergic neuromodulation in the rat vas deferens. *Eur. J. Pharmacol.* **334**, 87-93.
- *1013. Burnstock, G. (1997). (Series Editor). *The Autonomic Nervous System. Volume 12. Autonomic Innervation of the Skin*. Eds. J.L. Morris & I.L. Gibbons. Harwood Academic Publishers, Amsterdam, pp. 1-316.
1014. Jones, S.J., Gray, C., Boyde, A. & Burnstock, G. (1997). Purinergic transmitters inhibit bone formation by cultured osteoblasts. *Bone* **21**, 393-399.
1015. Ziganshin, A.U., Ziganshina, L.E. & Burnstock, G. (1997). Ecto-ATPases and receptors for ATP. (In Russian). *Exp. Clin. Pharmacol. (Moscow)* **60**, 78-82.
1016. Pinna, C., Rubino, A. & Burnstock, G. (1997). Age-related changes in purinergic and adrenergic components of sympathetic neurotransmission in guinea-pig seminal vesicles. *Br. J. Pharmacol.* **122**, 1411-1416.
- *1017. Burnstock, G. (1997). History of extracellular nucleotides and their receptors. In: *The P2 Nucleotide Receptors*. Eds. J.T. Turner, G. Weisman & J.S. Fedan, Humana Press Inc. Totowa, NJ. pp. 3-40.
1018. Hoyle, C.H.V., Thomas, P.K., Burnstock, G. & Appenzeller, O. (1997). Immunohistochemical localisation of neuropeptides and nitric oxide synthase in sural nerves from Egyptian mummies. *J. Auton. Nerv. Syst.* **67**, 105-108.
1019. Howard, M.K., Coffin, R.S., Maclean, A.R., Brown, S.M., Bailey, D., Anderson, P.N., Burnstock, G. & Latchman, D.S. (1997). Gene delivery to rat enteric neurons using herpes simplex virus based vectors. *J. Mol. Neurosci.* **9**, 65-74.
1020. Tew, E.M.M., Anderson, P.N., Saffrey, M.J. & Burnstock, G. (1998). Intrastriatal grafts of rat colonic smooth muscle lacking myenteric ganglia stimulate axonal sprouting and regeneration. *J. Anat.* **192**, 25-35.
1021. Ventura, S., Bavetta, S., Milner, P., Ralevic, V. & Burnstock, G. (1998). Nitric oxide synthase is colocalized with vasoactive intestinal polypeptide in postganglionic parasympathetic nerves innervating the rat vas deferens. *Neuroscience* **83**, 607-616.

1022. Ventura, S., Hoyle, C.H.V. & Burnstock, G. (1998). Sodium nitroprusside enhances contractions of the isolated guinea-pig vas deferens. *J. Pharm. Pharmacol.* **50**, 205-209.
1023. Bogdanov, Y., Rubino, A. & Burnstock, G. (1998). Characterisation of subtypes of the P2X and P2Y families of receptors in the foetal human heart. *Life Sci.* **62**, 697-703.
1024. Burnstock, G. (1998). Adenosine triphosphate (ATP) as a neurotransmitter and neuromodulator. In: *Encyclopedia of Neuroscience. 2nd edn(CD-ROM Version)*. Eds. G. Adelman & B.H. Smith, Elsevier Science B.V. Amsterdam, The Netherlands. [Print Version published in 1999, pp. 25-27].
1025. Karoon, P. & Burnstock, G. (1998). Reduced sympathetic noradrenergic neurotransmission in the tail artery of Donryu rats fed with high cholesterol-supplemented diet. *Br. J. Pharmacol.* **123**, 1016-1023.
1026. Toole, L., Belai, A. & Burnstock, G. (1998). A neurochemical characterisation of the golden hamster myenteric plexus. *Cell Tissue Res.* **291**, 385-394.
1027. Wildman, S.S., King, B.F. & Burnstock, G. (1998). Zn²⁺ modulation of ATP-responses at recombinant P2X₂ receptors and its dependence on extracellular pH. *Br. J. Pharmacol.* **123**, 1214-1220.
1028. Pinna, C., Knight, G., Puglisi, L. & Burnstock, G. (1998). Neurogenic and non-neurogenic responses in the urinary bladder of hibernating hamster. *Br. J. Pharmacol.* **123**, 1281-1287.
1029. Shankar, A., Loizidou, M., Aliev, G., Fredericks, S., Boulos, P.B., Holt, D., Burnstock, G. & Taylor, I. (1998). Raised endothelin-1 levels in patients with colorectal liver metastases. *Br. J. Surg.* **85**, 502-506.
1030. Chan, C.M., Unwin, R.J., Bardini, M., Oglesby, I.B., Ford, A.P.D.W., Townsend-Nicholson, A. & Burnstock, G. (1998). Localization of the P2X₁ purinoceptors by autoradiography and immunohistochemistry in rat kidneys. *Am. J. Physiol.* **274**, F799-F804.
1031. Loesch, A. & Burnstock, G. (1998). Perivascular nerve fibres and endothelial cells of the rat basilar artery: immuno-gold labelling of antigenic sites for type I and type III nitric oxide synthase. *J. Neurocytol.* **27**, 197-204.
1032. Nori, S., Fumagalli, L., Bo, X., Bogdanov, Y. & Burnstock, G. (1998). Coexpression of mRNAs for P2X₁, P2X₂ and P2X₄ receptors in rat vascular smooth muscle: an in situ hybridization and RT-PCR study. *J. Vasc. Res.* **35**, 179-185.
1033. Bogdanov, Y.D., Wildman, S.S., Clements, M.P., King, B.F. & Burnstock, G. (1998). Molecular cloning and characterization of rat P2Y₄ nucleotide receptor. Special Report. *Br. J. Pharmacol.* **124**, 428-430.
1034. Loesch, A. & Burnstock, G. (1998). The endothelium: Electron immunocytochemistry of vasoactive agents. In: *Modern Visualisation of the Endothelium*. Ed. J.M. Polak, Harwood Academic Publishers, Amsterdam. pp. 3-44.
1035. Bo, X., Karoon, P., Nori, S.L., Bardini, M. & Burnstock, G. (1998). P2X purinoceptors in postmortem human cerebral arteries. *J. Cardiovasc. Pharmacol.* **31**, 794-799.

1036. Aliev, G., Bodin, P. & Burnstock, G. (1998). Free radical generators cause changes in endothelial and inducible nitric oxide synthases and endothelin-1 immunoreactivity in endothelial cells from hyperlipidemic rabbits. *Mol. Genet. Metab.* **63**, 191-197.
1037. Chan, C.M., Unwin, R.J. & Burnstock, G. (1998). Potential for functional roles of extracellular ATP in the kidney and urinary tract. *Exp. Nephrol.* **6**, 200-207.
1038. Brauer, M.M. & Burnstock, G. (1998). Expression of β -adrenergic receptors in the rat uterus: effects of puberty and oestrogen treatment during prepubertal development. *Int. J. Dev. Neurosci.* **16**, 29-39.
1039. King, B.F., Wildman, S.S., Townsend-Nicholson, A. & Burnstock, G. (1998). Antagonism of an adenosine/ATP receptor in follicular *Xenopus* oocytes. *JPET.* **285**, 1005-1011.
1040. Jacobson, K.A., Kim, Y.-C., Wildman, S.S., Mohanram, A., Harden, T.K., Boyer, J.L., King, B.F. & Burnstock, G. (1998). A pyridoxine cyclic phosphate and its 6-azoaryl derivative selectively potentiate and antagonize activation of P2X₁ receptors. *J. Med. Chem.* **41**, 2201-2206.
1041. Pinna, C., Puglisi, L. & Burnstock, G. (1998). ATP and vasoactive intestinal polypeptide relaxant responses in hamster isolated proximal urethra. *Br. J. Pharmacol.* **124**, 1069-1074.
- *1042. Aliev, G. & Burnstock, G. (1998). Watanabe rabbits with heritable hypercholesterolaemia: a model of atherosclerosis. *Histol. Histopath.* **13**, 797-817.
- *1043. Humphrey, P.P.A., Khakh, B.S., Kennedy, C., King, B.F. & Burnstock, G. (1998). P2X receptors. In: *The IUPHAR Compendium of Receptor Characterization and Classification*. 1st edn. IUPHAR Media Ltd. London. pp. 195-208.
1044. Harden, T.K., Barnard, E.A., Boeynaems, J.-M., Burnstock, G., Dubyak, G., Hourani, S.M.O. & Insel, P.A. (1998). P2Y receptors. In: *The IUPHAR Compendium of Receptor Characterization and Classification*. 1st edn. IUPHAR Media Ltd. London. pp. 209-217.
1045. Llewellyn-Smith, I.J. & Burnstock, G. (1998). Ultrastructural localization of P2X₃ receptors in rat sensory neurons. *Neuroreport* **9**, 2245-2250.
1046. Bodin, P. & Burnstock, G. (1998). Increased release of ATP from endothelial cells during acute inflammation. *Inflamm. Res.* **47**, 351-354.
1047. Morrison, M.S., Turin, L., King, B.F., Burnstock, G. & Arnett, T.R. (1998). ATP is a potent stimulator of the activation and formation of rodent osteoclasts. *J. Physiol.* **511**, 495-500.
1048. Bo, X., Sexton, A., Xiang, Z., Nori, S.L. & Burnstock, G. (1998). Pharmacological and histochemical evidence for P2X receptors in human umbilical vessels. *Eur. J. Pharmacol.* **353**, 59-65.
1049. Karoon, P., Knight, G. & Burnstock, G. (1998). Enhanced vasoconstrictor responses in renal and femoral arteries of the golden hamster during hibernation. *J. Physiol.* **512**, 927-938.

1050. Yegutkin, G.G. & Burnstock, G. (1998). Steady-state binding of [³H]ATP to rat liver plasma membranes and competition by various purinergic agonists and antagonists. *Biochim. Biophys. Acta* **1373**, 227-236.
1051. Zhong, Y., Dunn, P.M., Xiang, Z., Bo, X. & Burnstock, G. (1998). Pharmacological and molecular characterisation of P2X purinoceptors in rat pelvic ganglion neurons. *Br. J. Pharmacol.* **125**, 771-781.
- *1052. Ralevic, V. & Burnstock, G. (1998). Receptors for purines and pyrimidines. *Pharmacol. Rev.* **50**, 413-492.
- *1053. Burnstock, G., Dobson, J.G., Liang, B.T. & Linden, J. (1998). *Cardiovascular Biology of Purines*. Kluwer Academic Publishers, Norwell, MA, pp. 1-374.
1054. Loesch, A. & Burnstock, G. (1998). Electron-immunocytochemical localization of the P2X₁ receptors in the rat cerebellum. *Cell Tissue Res.* **294**, 253-260.
1055. Saïag, B., Shacoori, V., Bodin, P., Catheline, M. & Burnstock, G. (1998). Lack of uptake, release and action of UTP at sympathetic perivascular nerve terminals in rabbit ear artery. *Eur. J. Pharmacol.* **358**, 139-145.
- *1056. Abbracchio, M.P. & Burnstock, G. (1998). Purinergic signalling: pathophysiological roles. *Jpn. J. Pharmacol.* **78**, 113-145.
1057. Ziganshin, A.U., Rychkov, A.V., Ziganshina, L.E., Kim, Y.-C., Camaioni, E., Burnstock, G. & Jacobson, K.A. (1998). Effects of several pyridoxal-6-azophenyl derivatives on responses via P2 purinoceptors (In Russian). *Chemico-Pharmaceutical J.* **32**, 3-4.
1058. Knight, G.E. & Burnstock, G. (1998). Effect of hibernation on responses of hamster vas deferens to sympathetic nerve stimulation and exogenous neurotransmitters. *J. Auton. Nerv. Syst.* **74**, 62-69.
1059. Ralevic, V., Knight, G. & Burnstock, G. (1998). Effects of hibernation and arousal from hibernation on mesenteric arterial responses of the golden hamster. *J. Pharmacol. Exp. Ther.* **287**, 521-526.
1060. Bradbury, E., McMahon, S.B. & Burnstock, G. (1998). The expression of P2X₃ purinoceptors in sensory neurons: effects of axotomy and glial-derived neurotrophic factor. *Mol. Cell. Neurosci.* **12**, 256-268.
1061. Xiang, Z., Bo, X. & Burnstock, G. (1998). Localization of ATP-gated P2X receptor immunoreactivity in rat sensory and sympathetic ganglia. *Neurosci. Lett.* **256**, 105-108.
1062. Xiang, Z., Bo, X., Oglesby, I.B., Ford, A.P.D.W. & Burnstock, G. (1998). Localization of ATP-gated P2X₂ receptor immunoreactivity in the rat hypothalamus. *Brain Res.* **813**, 390-397.
1063. Loesch, A., Milner, P. & Burnstock, G. (1998). Endothelin in perivascular nerves. An electron-immunocytochemical study of rat basilar artery. *Neuroreport* **9**, 3903-3906.

- *1064. King, B.F., Townsend-Nicholson, A. & Burnstock, G. (1998). Metabotropic receptors for ATP and UTP: exploring the correspondence between native and recombinant nucleotide receptors. *Trends Pharmacol. Sci.* **19**, 506-514.
1065. Kim, Y.-C., Camaioni, E., Ziganshin, A.U., Ji, X.-D., King, B.F., Wildman, S.S., Rychkov, A., Yoburn, J., Kim, H., Mohanram, A., Harden, T.K., Boyer, J.L., Burnstock, G. & Jacobson, K.A. (1998). Synthesis and structure-activity relationships of pyridoxal-6-azoaryl-5'-phosphate and phosphonate derivatives as P2 receptor antagonists. *Drug Dev. Res.* **45**, 52-66.
1066. Brauer, M.M., Burnstock, G., Thrasivoulou, C. & Cowen, T. (1998). In oculo transplants of myometrium from postpartum guinea pigs fail to support sympathetic reinnervation. *J. Anat.* **193**, 509-517.
- *1067. Burnstock, G. (1998). Purinergic signalling: therapeutic potential. *Drug Dev. Res.* **45**, 86-92.
1068. Meyer, M.P., Clarke, J.D.W., Patel, K., Townsend-Nicholson, A. & Burnstock, G. (1999). Selective expression of purinoceptor cP2Y₁ suggests a role for nucleotide signalling in development of the chick embryo. *Dev. Dynam.* **214**, 152-158.
1069. Townsend-Nicholson, A., King, B.F., Wildman, S.S. & Burnstock, G. (1999). Molecular cloning, functional characterization and possible cooperativity between the murine P2X₄ and P2X_{4a} receptors. *Brain Res. Mol. Brain Res.* **64**, 246-254.
1070. Knight, G.E. & Burnstock, G. (1999). NANC relaxation of the circular smooth muscle of the oesophagus of the Agama lizard involves the L-arginine-nitric oxide synthase pathway. *Comp. Biochem. Physiol.* **122**, 165-171.
1071. Brambilla, R., Burnstock, G., Bonazzi, A., Ceruti, S., Cattabeni, F. & Abbracchio, M.P. (1999). Cyclooxygenase-2 mediates P2Y receptor-induced reactive astrogliosis. Special Report. *Br. J. Pharmacol.* **126**, 563-567.
1072. Wildman, S.S., King, B.F. & Burnstock, G. (1999). Modulation of ATP-responses at recombinant rP2X₄ receptors by extracellular pH and zinc. *Br. J. Pharmacol.* **126**, 762-768.
1073. Xiang, Z., Bo, X. & Burnstock, G. (1999). P2X receptor immunoreactivity in the rat cochlea, vestibular ganglion and cochlear nucleus. *Hear. Res.* **128**, 190-196.
1074. Pinna, C., Eberini, I., Puglisi, L. & Burnstock, G. (1999). Presence of constitutive endothelial NOS immunoreactivity in urothelial cells of hamster proximal urethra. *Eur. J. Pharmacol.* **367**, 85-89.
1075. Wildman, S.S., Brown, S.G., King, B.F. & Burnstock, G. (1999). Selectivity of diadenosine polyphosphates for rat P2X receptor subunits. *Eur. J. Pharmacol.* **367**, 119-123.
1076. Yegutkin, G.G. & Burnstock, G. (1999). Steady-state binding of adenine nucleotides ATP, ADP and AMP to rat liver and adipose plasma membranes. *J. Recept. Signal Transduct. Res.* **19**, 437-448.
1077. Newton, M., Kamm, M.A., Soediono, P.O., Milner, P., Burnham, W.R. & Burnstock, G. (1999). Oesophageal epithelial innervation in health and reflux oesophagitis. *Gut* **44**, 317-322.

1078. Burnstock, G. (1999). Release of vasoactive substances from endothelial cells by shear stress and purinergic mechano-sensory transduction. *J. Anat.* **194**, 335-342.
1079. Bo, X., Alavi, A., Xiang, Z., Oglesby, I.B., Ford, A.P.D.W. & Burnstock, G. (1999). Localization of P2X₂ and P2X₃ receptor immunoreactive nerves in rat taste buds. *Neuroreport* **10**, 1107-1111.
- *1080. Rubino, A., Loesch, A. & Burnstock, G. (1999). Nitric oxide and endothelin-1 in coronary and pulmonary circulation. *Int. Rev. Cytol.* **189**, 59-93.
1081. Ziganshin, A.U., Ziganshina, L.E. & Burnstock, G. (1999). The study of the degradation velocity of the diadenosine polyphosphates by some guinea-pig tissues (In Russian). *Bull. Exp. Biol. Med. (Moscow)* **127**, 207-210.
1082. Saitongdee, P., Loesch, A., Knight, G., Milner, P. & Burnstock, G. (1999). Ultrastructural localization of nitric oxide synthase and endothelin in the renal and mesenteric arteries of the golden hamster: differences during and after arousal from hibernation. *Endothelium* **6**, 197-207.
1083. Toole, L., Belai, A., Shochina, M. & Burnstock, G. (1999). The effects of hibernation on the myenteric plexus of the golden hamster small and large intestine. *Cell Tissue Res.* **296**, 479-487.
1084. Gröschel-Stewart, U., Bardini, M., Robson, T. & Burnstock, G. (1999). Localisation of P2X₅ and P2X₇ receptors by immunohistochemistry in rat stratified squamous epithelia. *Cell Tissue Res.* **296**, 599-605.
1085. Shankar, A., Loizidou, M., Burnstock, G. & Taylor, I. (1999). Noradrenaline improves the tumour to normal blood flow ratio and drug delivery in a model of liver metastases. *Br. J. Surg.* **86**, 453-457.
1086. Rubino, A., Ziabary, L. & Burnstock, G. (1999). Regulation of vascular tone by UTP and UDP in isolated rat intrapulmonary arteries. *Eur. J. Pharmacol.* **370**, 139-143.
1087. Saïag, B., Shacoori, V., Bodin, P., Pape, D., Allain, H. & Burnstock, G. (1999). Free radical involvement in endothelium-dependent responses of the rat thoracic aorta in moderate hypoxic conditions. *Eur. J. Pharmacol.* **372**, 57-63.
1088. Gröschel-Stewart, U., Bardini, M., Robson, T. & Burnstock, G. (1999). P2X receptors in the rat duodenal villus. *Cell Tissue Res.* **297**, 111-117.
1089. Burnstock, G. (1999). Current status of purinergic signalling in the nervous system. *Prog. Brain Res.* **120**, 3-10.
1090. Saitongdee, P., Milner, P., Loesch, A., Knight, G. & Burnstock, G. (1999). Electron-immunocytochemical studies of perivascular nerves of mesenteric and renal arteries of golden hamsters during and after arousal from hibernation. *J. Anat.* **195**, 121-130.
1091. Brauer, M.M., Llodra, J., Scorza, M.C., Chavez, R., Burnstock, G., Thrasivoulou, C. & Cowen, T. (1999). Differential effects of prepubertal chronic oestrogen treatment on the synthesis of noradrenaline in uterine myometrial and perivascular sympathetic nerves. *Int. J. Dev. Neurosci.* **17**, 295-303.

1092. Jacobson, K.A., Hoffmann, C., Kim, Y.-C., Camaioni, E., Nandan, E., Jang, S.Y., Guo, D.-P., Ji, X.-D., von Kügelgen, I., Moro, S., Ziganshin, A.U., Rychkov, A., King, B.F., Brown, S.G., Wildman, S.S., Burnstock, G., Boyer, J.L., Mohanram, A. & Harden, T.K. (1999). Molecular recognition in P2 receptors: ligand development aided by molecular modeling and mutagenesis. *Prog. Brain Res.* **120**, 119-132.
1093. Bavetta, S., Hamlyn, P.J., Burnstock, G., Lieberman, A.R. & Anderson, P.N. (1999). The effects of FK506 on dorsal column axons following spinal cord injury in adult rats: neuroprotection and local regeneration. *Exp. Neurol.* **158**, 382-393.
1094. Liu, M., Dunn, P.M., King, B.F. & Burnstock, G. (1999). Rat chromaffin cells lack P2X receptors while those of the guinea-pig express a receptor with novel pharmacology. *Br. J. Pharmacol.* **128**, 61-68.
1095. Wildman, S.S., King, B.F. & Burnstock, G. (1999). Modulatory activity of extracellular H⁺ and Zn²⁺ on ATP-responses at rP2X₁ and rP2X₃ receptors. *Br. J. Pharmacol.* **128**, 486-492.
1096. Oglesby, I.B., Lachnit, W.G., Burnstock, G. & Ford, A.P.D.W. (1999). Subunit specificity of polyclonal antisera to the carboxy terminal regions of P2X receptors P2X₁ through P2X₇. *Drug Dev. Res.* **47**, 189-195.
1097. Belai, A. & Burnstock, G. (1999). Distribution and colocalization of nitric oxide synthase and calretinin in the myenteric neurons of developing, aging and Crohn's disease human small intestine. *Dig. Dis. Sci.* **44**, 1579-1587.
1098. McMillan, M.R., Burnstock, G. & Haworth, S.G. (1999). Vasodilatation of intrapulmonary arteries to P2 receptor nucleotides in normal and pulmonary hypertensive newborn piglets. *Br. J. Pharmacol.* **128**, 543-548.
1099. McMillan, M.R., Burnstock, G. & Haworth, S.G. (1999). Vasoconstriction of intrapulmonary arteries to P2 receptor nucleotides in normal and pulmonary hypertensive newborn piglets. *Br. J. Pharmacol.* **128**, 549-555.
- *1100. Burnstock, G. & Milner, P. (1999). Structural and chemical organisation of the autonomic nervous system with special reference to non-adrenergic, non-cholinergic transmission. In: *Autonomic Failure. A Textbook of Clinical Disorders of the Autonomic Nervous System. 4th Edn*, Eds. C.J. Mathias & R. Bannister, Oxford University Press, Oxford. pp. 63-71.
1101. Ralevic, V., Thomas, T., Burnstock, G. & Spyer, K.M. (1999). Characterization of P2 receptors modulating neural activity in rat rostral ventrolateral medulla. *Neuroscience* **94**, 867-878.
1102. King, B.F., Liu, M., Pintor, J., Gualix, J., Miras-Portugal, M.T. & Burnstock, G. (1999). Diinosine pentaphosphate (IP₅I) is a potent antagonist at recombinant rat P2X₁ receptors. *Br. J. Pharmacol.* **128**, 981-988.
1103. Burnstock, G. (1999). Current status of P2X receptors: distribution and pathophysiological roles. *Proc. West. Pharmacol. Soc.* **42**, 119-121.
- *1104. Burnstock, G. (1999). Series Editor. *The Autonomic Nervous System. Volume 13. Nervous Control of the Eye*. Eds. Burnstock, G. & Sillito, A.M. Harwood Academic Publishers, Amsterdam. pp. 1-302.
- *1105. Burnstock, G. (1999). Purinergic cotransmission. *Brain Res. Bull.* **50**, 355-357.

- *1106. Milner, P., Lincoln, J. & Burnstock, G. (1999). The neurochemical organisation of the autonomic nervous system. In: *Handbook of Clinical Neurology, Vol. 74(30): The Autonomic Nervous System, Part I - Normal Functions*, Ed. Appenzeller, O., Elsevier Science, Amsterdam. pp. 87-134.
1107. Meyer, M. P., Gröschel-Stewart, U., Robson, T. & Burnstock, G. (1999). Expression of two ATP-gated ion channels, P2X₅ and P2X₆, in developing chick skeletal muscle. *Dev. Dynam.* **216**, 442-449.
1108. Loesch, A., Miah, S. & Burnstock, G. (1999). Ultrastructural localisation of ATP-gated P2X₂ receptor immunoreactivity in the rat hypothalamo-neuropophysial system. *J. Neurocytol.* **28**, 485-494.
1109. Afework, M. & Burnstock, G. (1999). Distribution of P2X receptors in the rat adrenal gland. *Cell Tissue Res.* **298**, 449-456.
1110. Belai, A. & Burnstock, G. (2000). Pattern of distribution and co-localization of NOS and ATP in the myenteric plexus of human fetal stomach and intestine. *Neuroreport* **11**, 5-8.
1111. Zhong, Y., Dunn, P.M. & Burnstock, G. (2000). Pharmacological comparison of P2X receptors on rat coeliac, mouse coeliac and mouse pelvic ganglion neurons. *Neuropharmacology* **39**, 172-180.
1112. Bardini, M., Lee, H.Y. & Burnstock, G. (2000). Distribution of P2X receptor subtypes in the rat female reproductive tract at late pro-oestrus/early oestrus. *Cell Tissue Res.* **299**, 105-113.
1113. Yegutkin, G., Bodin, P. & Burnstock, G. (2000). Effect of shear stress on the release of soluble ecto-enzymes ATPase and 5'-nucleotidase along with endogenous ATP from vascular endothelial cells. *Br. J. Pharmacol.* **129**, 921-926.
1114. Zhong, Y., Dunn, P. M. & Burnstock, G. (2000). Guinea-pig sympathetic neurons express varying proportions of two distinct P2X receptors. *J. Physiol.* **523**, 391-402.
1115. Harada, H., Chan, C. M., Loesch, A., Unwin, R. J. & Burnstock, G. (2000). Induction of proliferation and apoptotic cell death via P2Y and P2X receptors, respectively, in rat glomerular mesangial cells. *Kidney Int.* **57**, 949-958.
- *1116. Burnstock, G. (2000). P2X receptors in sensory neurones. *Br. J. Anaesth.* **84**, 476-488.
1117. Milner, P., Loesch, A. & Burnstock, G. (2000). Neural endothelin in hypertension: increased expression in ganglia and nerves to cerebral arteries of the spontaneously hypertensive rat. *J. Vasc. Res.* **37**, 39-49.
1118. Loesch, A. & Burnstock, G. (2000). Ultrastructural localization of arginine vasopressin in coronary vessels of newborn rat. *Cell Tissue Res.* **299**, 403-408.
1119. Rong, W., Burnstock, G. & Spyer, K.M. (2000). P2X purinoceptor-mediated excitation of trigeminal lingual nerve terminals in an *in vitro* intra-arterially perfused rat tongue preparation. *J. Physiol.* **524**, 891-902.

1120. Mok, M.H., Knight, G.E., Andrews, P.L., Hoyle, C.H. & Burnstock, G. (2000). The effects of cyclophosphamide on neurotransmission in the urinary bladder of *Suncus murinus*, the house musk shrew. *J. Auton. Nerv. Syst.* **80**, 130-136.
1121. Loesch, A. & Burnstock, G. (2000). Ultrastructural localisation of ATP-gated P2X₂ receptor immunoreactivity in vascular endothelial cells in rat brain. *Endothelium* **7**, 93-98.
1122. Glass, R., Townsend-Nicholson, A. & Burnstock, G. (2000). P2 receptors in the thymus: expression of P2X and P2Y receptors in adult rats, an immunohistochemical and *in situ* hybridisation study. *Cell Tissue Res.* **300**, 295-306.
1123. Lee, H.-Y., Bardini, M. & Burnstock, G. (2000). P2X receptor immunoreactivity in the male genital organ of the rat. *Cell Tissue Res.* **300**, 295-306.
1124. Yegutkin, G.G. & Burnstock, G. (2000). Inhibitory effects of some purinergic agents on ecto-ATPase activity and pattern of stepwise ATP hydrolysis in rat liver plasma membranes. *Biochim. Biophys. Acta* **1466**, 234-244.
1125. Bo, X., Schoepfer, R. & Burnstock, G. (2000). Molecular cloning and characterization of a novel ATP P2X receptor subtype from embryonic chick skeletal muscle. *J. Biol. Chem.* **275**, 14401-14407.
1126. Lee, H.-Y., Bardini, M. & Burnstock, G. (2000). Distribution of P2X receptors in the urinary bladder and ureter of the rat. *J. Urol.* **163**, 2002-2007.
1127. Saitongdee, P., Milner, P., Becker, D.L., Knight, G. & Burnstock, G. (2000). Increased connexin43 gap junction protein in hamster cardiomyocytes during cold acclimatization and hibernation. *Cardiovasc. Res.* **47**, 108-115.
1128. Brown, S.G., King, B.F., Kim, Y.-C., Jang, S.Y., Burnstock, G. & Jacobson, K.A. (2000). Activity of novel adenine nucleotide derivatives as agonists and antagonists at recombinant rat P2X receptors. *Drug Dev. Res.* **49**, 253-259.
- *1129. Burnstock, G., McMahon, S.B., Humphrey, P.P.A. & Hamilton, S.G. (2000). ATP (P2X) receptors and pain. In: *Proceedings of the 9th World Congress on Pain. Progress in Pain Research and Management, Vol 16*, Eds. Devor, M., Rowbottom, M. C. & Wiesenfeld-Hallin, Z., IASP Press, Seattle. pp. 63-76.
1130. King, B.F., Townsend-Nicholson, A., Wildman, S. S., Thomas, T., Spyer, K. M. & Burnstock, G. (2000). Coexpression of rat P2X₂ and P2X₆ subunits in *Xenopus* oocytes. *J. Neurosci.* **20**, 4871-4877.
1131. Afework, M. & Burnstock, G. (2000). Age-related changes in the localization of P2X (nucleotide) receptors in the rat adrenal gland. *Int. J. Dev. Neurosci.* **18**, 515-520.
1132. Brouns, I., Adriaensen, D.D., Burnstock, G. & Timmermans, J.-P. (2000). Intraepithelial vagal sensory nerve terminals in rat pulmonary neuroepithelial bodies express P2X₃ receptors. *Am. J. Respir. Cell Mol. Biol.* **23**, 52-61.
1133. Dunn, P.M., Liu, M., Zhong, Y., King, B.F. & Burnstock, G. (2000). Diinosine pentaphosphate: an antagonist which discriminates between recombinant P2X₃ and P2X_{2/3} receptors and between two P2X receptors in rat sensory neurones. *Br. J. Pharmacol.* **130**, 1378-1384.

- *1134. Ralevic, V. & Burnstock, G. (2000). Purinergic receptors, nitric oxide, and regional blood flow. In: *Nitric Oxide and the Regulation of the Peripheral Circulation*, Eds. Kadowitz, P.J. & McNamara, D.B., Birkhauser, Boston. pp. 65-84.
1135. Pannicke, T., Fischer, W., Biedermann, B., Schädlich, H., Grosche, J., Faude, F., Wiedemann, P., Allgaier, C., Illes, P., Burnstock, G. & Reichenbach, A. (2000). P2X₇ receptors in Müller glial cells from the human retina. *J. Neurosci.* **20**, 5965-5972.
- *1136. Jacobson, K.A., King, B.F. & Burnstock, G. (2000). Pharmacological characterization of P2 (nucleotide) receptors. *Celltransmissions* **16**, 3-16.
1137. Wong, A.Y.C., Burnstock, G. & Gibb, A.J. (2000). Single channel properties of P2X ATP receptors in outside-out patches from rat hippocampal granule cells. *J. Physiol.* **527**, 529-547.
1138. Afework M. & Burnstock, G. (2000). Localization of P2X receptors in the guinea pig adrenal gland. *Cells Tissues Org* **167**, 297-302.
1139. Chamary, V.L., Robson, T., Loizidou, M., Boulos, P.B., Taylor, I. & Burnstock, G. (2000). Progressive loss of perivascular nerves adjacent to colorectal cancers. *Eur J Surg. Oncol.* **26**, 588-593.
1140. Hoebertz, A., Townsend-Nicholson, A., Glass, R., Burnstock, G. & Arnett, T.R. (2000). Expression of P2 receptors in bone and cultured bone cells. *Bone* **27**, 503-510.
1141. Bailey, M.A., Imbert-Teboul, M., Turner, C., Marsy, S., Srari, K., Burnstock, G. & Unwin R.J. (2000). Axial distribution and characterization of basolateral P2Y receptors along the rat renal tubule. *Kidney Int.* **58**, 1893-1901.
- *1142. Cockayne, D.A., Hamilton, S.G., Zhu, Q.-M., Dunn, P.M., Zhong, Y., Novakovic, S., Malmberg, A.B., Cain, G., Berson, A., Kassotakis, L., Hedley, L., Lachnit, W.G., Burnstock, G., McMahon, S.B. & Ford, A.P.D.W. (2000) Urinary bladder hyporeflexia and reduced pain-related behaviour in P2X₃-deficient mice. *Nature* **407**, 1011-1015.
1143. Milner, P., Loesch, A. & Burnstock, G. (2000). Endothelin immunoreactivity and mRNA expression in sensory and sympathetic neurones following selective denervation. *Int. J. Dev. Neurosci.* **18**, 727-734.
1144. Burnstock, G. & Williams, M (2000). P2 purinergic receptors: modulation of cell function and therapeutic potential. *J. Pharmacol. Exp. Ther.* **295**, 862-869.
1145. Norton, W.H.J., Rohr, K.B. & Burnstock, G. (2000). Embryonic expression of a P2X₃ receptor encoding gene in zebrafish. *Mech. Dev.* **99**, 149-152.
- *1146. Khakh, B.S., Barnard, E.A., Burnstock, G., Kennedy, C., King, B.F., North, R.A., Séguéla, P., Voigt, M. & Humphrey, P.P.A. (2000). P2X receptor-channels. In: *The IUPHAR Compendium of Receptor Characterization and Classification, 2nd edition*, Ed. Girdlestone, D., IUPHAR Media Ltd., London. pp. 290-305.
- *1147. King, B.F., Burnstock, G., Boyer, J.L., Boeynaems, J.-M., Weisman, G.A., Kennedy, C., Jacobson, K.A., Humphries, R.G., Abbracchio, M.P. & Miras-Portugal, M.T. (2000). The P2Y receptors. In: *The IUPHAR Compendium of Receptor Characterization and Classification, 2nd*, Ed. Girdlestone, D., IUPHAR Media Ltd., London. pp. 306-320.

- *1148. Burnstock, G. (2001). Purinergic signalling in development. In: *Handbook of Experimental Pharmacology, Volume 151/I. Purinergic and Pyrimidinergic Signalling I - Molecular, Nervous and Urinogenitary System Function*, Eds. Abbracchio, M.P. & Williams, M., Springer-Verlag, Berlin. pp. 89-127.
- *1149. Burnstock, G. (2001). Purinergic signalling in lower urinary tract. In: *Handbook of Experimental Pharmacology, Volume 151/I. Purinergic and Pyrimidinergic Signalling I - Molecular, Nervous and Urinogenitary System Function*, Eds. Abbracchio, M.P. & Williams, M., Springer-Verlag, Berlin. pp. 423-515.
- *1150. Burnstock, G. (2001). Purinergic signalling in gut. In: *Handbook of Experimental Pharmacology, Volume 151/II. Purinergic and Pyrimidinergic Signalling II - Cardiovascular, Respiratory, Immune, Metabolic and Gastrointestinal Tract Function*, Eds. Abbracchio, M.P. & Williams, M., Springer-Verlag, Berlin. pp. 141-238.
1151. Knight, G.E. & Burnstock, G. (2001). Identification of P1 and P2 receptors in the aorta of the lizard (*Agama sp.*). *Comp. Biochem. Physiol. C.* **128**, 413-423.
1152. Khakh, B.S., Burnstock, G., Kennedy, C., King, B.F., North, R.A., Séguéla, P., Voigt, M. & Humphrey, P.P.A. (2001). International Union of Pharmacology. XXIV. Current status of the nomenclature and properties of P2X receptors and their subunits. *Pharma. Rev.* **53**, 107-118.
1153. Liu, M., King, B.F., Dunn, P.M., Rong, W., Townsend-Nicholson, A. & Burnstock, G. (2001). Coexpression of P2X₃ and P2X₂ receptor subunits in varying amounts generates heterogenous populations of P2X receptors that evoke a spectrum of agonist responses comparable to that seen in sensory neurons. *J. Pharmacol. Exp. Ther.* **296**, 1043-1050.
1154. Rocha, I., Burnstock, G. & Spyer, K.M. (2001). Effect on urinary bladder function and blood pressure on the activation of putative purine receptors in brainstem areas. *Auton. Neurosci.* **88**, 6-15.
- *1155. Burnstock, G. (2001). Purine-mediated signalling in pain and visceral perception. *Trends Pharmacol. Sci.* **22**, 182-188.
- *1156. Burnstock, G. (2001). Preface: the past and future of research on purinergic signalling in the nervous system. *Seitai no Kagaku* **52**, 96-100.
1157. Alavi, A.M., Dubyak, G.R. & Burnstock, G. (2001). Immunohistochemical evidence for ATP receptors in human dental pulp. *J. Dental Res.* **80**, 476-483.
1158. Hoebertz, A., Meghji, S., Burnstock, G. & Arnett, T.R. (2001). Extracellular ADP is a powerful osteolytic agent: evidence for signaling through the P2Y₁ receptor on bone cells. *FASEB J.* **15**, 1139-1148.
- *1159. Burnstock, G. (2001). Expanding field of purinergic signaling. *Drug Dev. Res.* **52**, 1-10.
- *1160. Bo, X. & Burnstock, G. (2001). Localization of ATP P2X Receptors . In: *Ion Channel Localization Methods and Protocols*, Eds. Lopatin, A. & Nichols, C.G., Humana Press Inc., Totowa, NJ. pp. 57-73.
1161. Bolego, C., Centemeri, C., Abbracchio, M.P., Ceruti, S., Cattabeni, F., Jacobson, K.A., Puglisi, L., Rovati, G.E., Burnstock, G. & Nicosia, S. (2001). Two distinct P2Y

receptors are involved in purine- and pyrimidine-evoked Ca^{2+} elevation in mammalian brain astrocyte cultures. *Drug Dev. Res.* **52**, 122-132.

- *1162. Dunn, P.M., Zhong, Y. & Burnstock, G. (2001). P2X receptors in peripheral neurones. *Prog. Neurobiol.* **65**, 107-134.
1163. Glass, R. & Burnstock, G. (2001). Immunohistochemical identification of cells expressing ATP-gated cation channels (P2X receptors) in the adult rat thyroid. *J. Anat.* **198**, 569-579.
1164. Kim, Y.-C., Brown, S.G., Harden, T.K., Boyer, J.L., Dubyak, G., King, B.F., Burnstock, G. & Jacobson, K.A. (2001). Structure-activity relationships of pyridoxal phosphate derivatives as potent and selective antagonists of P2X₁ receptors. *J. Med. Chem.* **44**, 340-349.
1165. Zhong, Y., Dunn, P.M. & Burnstock, G. (2001). Multiple P2X receptors on guinea pig pelvic ganglion neurons exhibit novel pharmacological properties. *Br. J. Pharmacol.* **132**, 221-233.
1166. Ryten, M., Hoebertz, A. & Burnstock, G. (2001). Sequential expression of three receptor subtypes for extracellular ATP in developing rat skeletal muscle. *Dev. Dyn.* **221**, 331-341.
1167. Vlaskovska, M., Kasakov, L., Rong, W., Bodin, P., Bardini, M., Cockayne, D.A., Ford, A.P.D.W. & Burnstock, G. (2001). P2X₃ knockout mice reveal a major sensory role for urothelially released ATP. *J. Neurosci.* **21**, 5670-5677.
1168. Glass, R., Bardini, M., Robson, T. & Burnstock, G. (2001). Expression of nucleotide P2X receptor subtypes during spermatogenesis in the adult rat testis. *Cells Tissues Org.* **169**, 377-387.
1169. Aliev, G., Smith, M.A., Turmaine, M., Neal, M.L., Zimina, T.V., Friedland, R.P., Perry, G., LaManna, J.C. & Burnstock, G. (2001). Atherosclerotic lesions are associated with increased immunoreactivity for inducible nitric oxide synthase and endothelin-1 in thoracic aortic intimal cells of hyperlipidemic Watanabe rabbits. *Exp. Mol. Pathol.* **71**, 40-54.
1170. Cinkilic, O., King, B.F., van der Giet, M., Schlüter, H., Zidek, W. & Burnstock, G. (2001). Selective agonism of group I P2X receptors by dinucleotides dependent on a single adenine moiety. *J. Pharmacol. Exp. Ther.* **299**, 131-136.
1171. Bailey, M.A., Imbert-Teboul, M., Turner, C., Srail, S.K., Burnstock, G. & Unwin, R.J. (2001). Evidence for basolateral P2Y₆ receptors along the rat proximal tubule: functional and molecular characterization. *J. Am. Soc. Nephrol.* **12**, 1640-1647.
1172. Calvert, R.C., Thompson, C.S., Khan, M.A., Mikhailidis, D.P., Morgan, R.J. & Burnstock, G. (2001). Alterations in cholinergic and purinergic signalling in a model of the obstructed bladder. *J. Urol.* **166**, 1530-1533.
- *1173. Calvert, R.C., Banks, F., Morgan, R. & Burnstock, G. (2001). Purinergic signalling and its relevance to the urologist. *Urology News* **5**, 12-14.
- *1174. Burnstock, G. (2001). Overview of P2 receptors: possible functions in immune cells. *Drug Dev. Res.* **53**, 53-59.

1175. Bo, X., Liu, M., Schoepfer, R. & Burnstock, G. (2001). Characterization and expression of ATP P2X₄ receptor from embryonic chick skeletal muscle. *Drug Dev. Res.* **53**, 22-28.
1176. Brambilla, R., Schiller, P., D'Ippolito, G., Neary, J.T., Burnstock, G., Cattabeni, F. & Abbracchio, M.P. (2001). Identification of a novel P2 receptor associated with cyclooxygenase-2 induction and reactive astrogliosis. *Drug Dev. Res.* **53**, 148-157.
1177. Loesch, A. & Burnstock, G. (2001). Immunoreactivity to P2X₆ receptors in the rat hypothalamo-neurohypophysial system: an ultrastructural study with ExtrAvidin and colloidal gold-silver immunolabelling. *Neuroscience* **106**, 621-631.
- *1178. King, B.F. & Burnstock, G. (2001). P2 receptors. In: *The Sigma-RBI Handbook of Receptor Classification and Signal Transduction, 4th*, Ed. Watling, K. Sigma-RBI, St Louis, MO. pp. 64-67.
1179. Brown, S.G., Kim, Y.-C., Kim, S.-A., Jacobson, K.A., Burnstock, G. & King, B.F. (2001). Actions of a series of PPADS analogs at P2X₁ and P2X₃ receptors. *Drug Dev. Res.* **53**, 281-291.
1180. Whitlock, A., Burnstock, G. & Gibb, A.J. (2001). The single-channel properties of P2X ATP receptors in outside-out patches from rat hypothalamic paraventricular parvocells. *Pflugers Arch.* **443**, 115-122.
- *1181. Bodin, P. & Burnstock, G. (2001). Purinergic signalling: ATP release. *Neurochem. Res.* **26**, 959-969.
1182. Bodin, P. & Burnstock, G. (2001). Evidence that release of ATP from endothelial cells during increased shear stress is vesicular. *J. Cardiovasc. Pharmacol.* **38**, 900-908.
1183. Thomas, T., Ralevic, V., Bardini, M., Burnstock, G. & Spyer, K.M. (2001). Evidence for the involvement of purinergic signalling in the control of respiration. *Neuroscience* **107**, 481-490.
1184. Schädlich, H., Wirkner, K., Franke, H., Bauer, S., Grosche, J., Burnstock, G., Reichenbach, A., Illes, P. & Allgaier, C. (2001). P2X₂, P2X₂₋₂ and P2X₅ receptor subunit expression and function in rat thoracolumbal sympathetic neurons. *J. Neurochem.* **79**, 997-1003.
- *1185. Meyer, M.P., Swann, K., Burnstock, G. & Clarke, J.D.W. (2001). The extracellular ATP receptor, cP2Y₁, inhibits cartilage formation in micromass cultures of chick limb mesenchyme. *Dev. Dyn.* **222**, 494-505.
- *1186. Coutinho-Silva, R., Parsons, M., Robson, T. & Burnstock, G. (2001). Changes in expression of P2 receptors in rat and mouse pancreas during development and aging. *Cell Tissue Res.* **306**, 373-383.
1187. Zhong, Y., Dunn, P.M., Bardini, M., Ford, A.P.D.W., Cockayne, D.A. & Burnstock, G. (2001). Changes in P2X receptor responses of sensory neurons from P2X₃-deficient mice. *Eur. J. Neurosci.* **14**, 1784-1792.
1188. Asham, E., Shankar, A., Loizidou, M., Fredericks, S., Miller, K., Boulos, P.B., Burnstock, G. & Taylor, I. (2001). Increased endothelin-1 in colorectal cancer and reduction of tumour growth by ET_A antagonism. *Br. J. Cancer* **85**, 1759-1763.

1189. D'Ambrosi, N., Murra, B., Cavaliere, F., Amadio, S., Bernardi, G., Burnstock, G. & Volonté, C. (2001). Interaction between ATP and nerve growth factor signalling in the survival and neuritic outgrowth from PC12 cells. *Neuroscience* **108**, 527-534.
- 1189A. Burnstock, G. (2001). Purinoceptors and their role in pathophysiology. *Kidney and Blood Pressure Research* **24**, 371-374.
1190. Knight, G.E., Bodin, P., de Groat, W.C. & Burnstock, G. (2002). ATP is released from guinea pig ureter epithelium on distension. *Am. J. Physiol.* **282**, F281-F288.
1191. Brown, S.G., Townsend-Nicholson, A., Jacobson, K.A., Burnstock, G. & King, B.F. (2002). Heteromultimeric P2X_{1/2} receptors show a novel sensitivity to extracellular pH. *J. Pharmacol. Exp. Ther.* **300**, 673-680.
1192. O'Reilly, B.A., Kosaka, A.H., Knight, G.E., Chang, T.K., Ford, A.P.D.W., Rymer, J.M., Popert, R., Burnstock, G. & McMahon, S.B. (2002). P2X receptors and their role in female idiopathic detrusor instability. *J. Urol.* **167**, 157-164.
1193. Hillman, K.A., Johnson, T.M., Winyard, P.J.D., Burnstock, G., Unwin, R.J. & Woolf, A.S. (2002). P2X₇ receptors are expressed during mouse nephrogenesis and in collecting duct cysts of the *cpk/cpk* mouse. *Exp. Nephrol.* **10**, 34-42.
1194. Cheung, K.-K. & Burnstock, G. (2002). Localisation of P2X₃ and co-expression with P2X₂ receptors during rat embryonic neurogenesis. *J. Comp. Neurol.* **443**, 368-382.
- *1195. Burnstock, G. (2002). Potential therapeutic targets in the rapidly expanding field of purinergic signalling. *Clinical Medicine* **2**, 45-53.
- *1196. Burnstock, G. (2002). Purinergic signalling and vascular cell proliferation and death. *Arteriosclerosis, Thrombosis and Vascular Biology* **22**, 364-373.
1197. Burnstock, G. & Lavin, S. (2002). Interstitial cells of Cajal and purinergic signalling. *Auton. Neurosci.* **97**, 68-72.
1198. Amadio, S., D'Ambrosi, N., Cavaliere, F., Murra, B., Sancesario, G., Bernardi, G., Burnstock, G. & Volonte, C. (2002). P2 receptor modulation and cytotoxic function in cultured CNS neurones. *Neuropharmacology* **42**, 489-501.
1199. Chávez-Genaro, R., Viettro, L., Richeri, A., Coirolo, N., Burnstock, G., Cowen, T. & Brauer, M.M. (2002). Differential effects of oestrogen on developing and mature uterine sympathetic nerves. *Cell Tissue Res.* **308**, 61-73.
1200. Aliev, G., Smith, M.A., Seyidova, D., Neal, M.L., Shi, J., Loizidou, M., Turmaine, M., Friedland, R.P., Taylor, I., Burnstock, G., Perry, G. & LaManna, J.C. (2002). Increased expression of NOS and ET-1 immunoreactivity in human colorectal metastatic liver tumors is associated with selective depression of constitutive NOSs immunoreactivity in vessel endothelium. *J. Submicrosc. Cytol. Pathol.* **34**, 37-50.
1201. Rong, W., Spyer, M. & Burnstock, G. (2002). Activation and sensitisation of low and high threshold afferent fibres mediated by P2X receptors in the mouse urinary bladder. *J. Physiol.* **541**, 591-600.
1202. Richeri, A., Viettro, L., Chávez-Genaro, R., Burnstock, G., Cowen, T. & Brauer, M.M. (2002). Effects of infantile/prepubertal chronic estrogen treatment and chemical sympathectomy with guanethidine on developing cholinergic nerves of the rat uterus. *J. Histochem. Cytochem.* **50**, 839-850.

1203. Kalmar, B., Burnstock, G., Vrbova, G. & Greensmith, L. (2002). The effect of neonatal nerve injury on the expression of heat shock proteins in developing rat motoneurons. *Journal of Neurotrauma* **19**, 667-679.
1204. Glass, R., Loesch, A., Bodin, P. & Burnstock, G. (2002). P2X₄ and P2X₆ receptors associate with VE-cadherin in human endothelial cells. *Cell. Mol. Life Sci.* **59**, 870-881.
1205. Kalmar, B., Burnstock, G., Vrbová, G., Urbanics, R. Csermely, P. & Greensmith, L. (2002). Upregulation of heat shock proteins rescues motoneurons from axotomy-induced cell death in neonatal rats. *Exp. Neurol.* **176**, 87-97.
1206. Hoebertz, A., Mahendran, S., Burnstock, G. & Arnett, T.R. (2002). ATP and UTP at low concentrations strongly inhibit bone formation by osteoblasts: a novel role for the P2Y₂ receptor in bone remodelling. *Journal of Cellular Biochemistry* **86**, 413-419.
1207. Ryten, M., Dunn, P.M., Neary, J.T., and Burnstock, G. (2002). ATP regulates the differentiation of mammalian skeletal muscle by activation of a P2X₅ receptor on satellite cells. *Journal of Cell Biology* **158**, 345-355.
1208. Loesch, A. and Burnstock, G. (2002). Endothelin in human cerebrovascular nerves. *Clinical Science* **103**, 404S-407S.
1209. Hoyle, C.H.V., Milner, P., and Burnstock, G. (2002). Neuroeffector transmission in the intestine. In: *The Autonomic Nervous System, Volume 14. Innervation of the Gastrointestinal Tract. Vol. 13.* Eds S. J. H. Brooks and M. Costa. Taylor & Francis, London & New York. pp. 295-340.
1210. Burnstock, G. (2002). (Series Editor). *The Autonomic Nervous System. Volume 14. Innervation of the Gastrointestinal Tract.* (Eds S. J. H. Brooks and M. Costa). Taylor & Francis, London & New York, pp 1-535.
1211. Wildman, S.S., Brown, S.G., Rahman, M., Noel, C.A., Churchill, L., Burnstock, G., Unwin, R.J. and King, B.F. (2002). Sensitisation by extracellular Ca²⁺ of rat P2X₅ receptor and its pharmacological properties compared to rat P2X₁. *Molecular Pharmacology* **62**, 957-966.
1212. Nassauw, L.V., Brouns, I., Adriaensen, D., Burnstock, G. and Timmermans, J.-P. (2002). Neurochemical identification of enteric neurons expressing P2X₃ receptors in the guinea-pig ileum. *Histochemistry and Cell Biology* **118**, 193-203.
1213. Brauer, M.M., Chávez-Genaro, R., Richeri, A., Viettro, L., Frias, A.I., Burnstock, G. and Cowen, T. (2002). The oestrogenized rat myometrium inhibits organotypic sympathetic reinnervation. *Auton. Neurosci.* **101**, 13-22.
1214. Burnstock, G. (2002) Structural and chemical organisation of the autonomic neuroeffector system. In: *Handbook of the Autonomic Nervous System in Health and Disease.* Eds. C.L. Bolis, J, Licinio and S. Govoni. Marcel Dekker Inc., New York, pp. 1-54.
1215. King, B.F. and Burnstock, G. (2002). Purinergic receptors. In: *Understanding G protein-coupled receptors and their role in the CNS.* Eds. M. Pangalos and C. Davies. Oxford University Press, Oxford, pp. 422-438
1216. Ziganshin, A.U., Rychkov, A.V., Ziganshina, L.E. and Burnstock, G. (2002). Temperature-dependency of P2 receptor-mediated responses. *Eur. J. Pharmacol.* **456**, 107-114.

1217. Giaroni,C., Knight,G.E., Ruan,H.-Z., Glass,R., Bardini,M., Lecchini,S., Frigo,G. and Burnstock,G. (2002). P2 receptors in the murine gastrointestinal tract. *Neuropharmacology* **43**, 1313-1323.
1218. Ziganshin,A.U., Ziganshina,L.E. and Burnstock,G. (2002). P2 receptors: theoretical background for the use in clinical practice. (In Russian). *Bull. Exp. Biol. Med.* **134**, 313-317.
1219. Loesch,A., Glass,R. and Burnstock,G. (2002). Ultrastructural identification of P2Y₂ receptor mRNA in the rat thymus. *Cells Tissues Organs* **172**, 255-264.
- *1220. Abbracchio,M.P., Boeynaems,J.-M., Barnard,E.A., Boyer,J.L., Kennedy,C., Miras-Portugal,M.T., King,B.F., Gachet,C., Jacobson,K.A., Weisman,G.A. and Burnstock,G. (2003). Characterization of the UDP-glucose receptor (re-named here the P2Y₁₄ receptor) adds diversity to the P2Y receptor family. *Trends in Pharmacological Sciences* **24**, 52-55.
1221. Brouns,I., Van Genechten,J., Hayashi,H., Gajda,M., Gomi,T., Burnstock,G., Timmermans,J.-P. and Adriaensen,D. (2003). Dual sensory innervation of pulmonary neuroepithelial bodies. *American Journal of Respiratory Cell and Molecular Biology* **28**, 275-285.
1222. Jagroop,I.A., Burnstock,G. and Mikhailidis,D.P. (2003). Both the ADP receptors, P2Y₁ and P2Y₁₂ play a role in controlling shape change in human platelets. *Platelets* **14**, 15-20.
- *1223. Burnstock,G. (2003).(Series Editor). *The Autonomic Nervous System. Volume 15. Autonomic Neuroimmunology*. (Eds J. Bienenstock, E.J.Goetzl, M.G. Blennerhassett). Taylor & Frances, London & New York, pp 1-535.
1224. Bo,X., Jiang,L., Wilson,H.L., Kim,M., Burnstock,G., Surprenant,A. and North,R.A. (2003). Pharmacological and biophysical properties of the human P2X₅ receptor. *Molecular Pharmacology* **63**, 1407-1416.
1225. Ziganshin,A.U., Khaziakhmetov,D.F., Ziganshina,L.E., Khaziakhmetova,V.N., Dgordgikiya,R.K. and Burnstock,G. (2003). Contractile activity of human greater saphenous vein mediated by P2 receptors (in Russian). *Bulletin of Experimental Biology and Medicine* **135**, 23-25.
1226. Greig,A.V.H., Linge,C., Terenghi,G., McGrouther,D.A. and Burnstock,G. (2003). Purinergic receptors are part of a functional signalling system for proliferation and differentiation of human epidermal keratinocytes. *Journal of Investigative Dermatology* **120**, 1007-1015.
- *1227. Ralevic,V. and Burnstock,G. (2003). Involvement of purinergic signalling in cardiovascular diseases. *Drug News & Perspectives* **16**, 133-140.
- *1228. Hoebertz,A., Arnett,T.R. and Burnstock,G. (2003). Purinergic signalling in bone resorption and formation by purines and pyrimidines. *Trends in Pharmacological Sciences* **24**, 290-297.
1229. Coutinho-Silva,R., Parsons,M., Robson,T., Lincoln,J. and Burnstock,G. (2003). P2X and P2Y purinoceptor expression in pancreas from streptozotocin-diabetic rats. *Molecular and Cellular Endocrinology* **204**, 141-154.
- *1230. Burnstock,G. (2003). Introduction: ATP and its metabolites as potent extracellular agonists. In: *Current Topics in Membranes, Vol 54. Purinergic Receptors and Signalling* Ed E. M. Schwiebert. Academic Press, San Diego, pp.1-27

- *1231. Burnstock,G. (2003). Purinergic receptors in the nervous system. In: *Current Topics in Membranes, Vol 54. Purinergic Receptors and Signalling* Ed E. M. Schwiebert. Academic Press, San Diego, pp.307-368
1232. Brouns,I., Van Genechten,J., Burnstock,G., Timmermans,J.-P. and Adriaensen,D. (2003). Ontogenesis of P2X₃ receptor-expressing nerve fibres in the rat lung, with special reference to neuroepithelial bodies. *Biomedical Research* **14**, 80-86.
1233. Bo,X., Kim,M., Nori,S.L., Schoepfer,R., Burnstock,G. and North,R.A. (2003). Tissue distribution of P2X₄ receptors studied with an ectodomain antibody. *Cell and Tissue Research* **313**, 159-165.
1234. Greig,A.V.H., Linge,C., Healy,V., Lim,P., Clayton,E., Rustin,M.H., McGrouther,D.A. and Burnstock,G. (2003). Expression of purinergic receptors in non-melanoma skin cancers and their functional roles in A431 cells. *Journal of Investigative Dermatology* **121**, 315-327.
1235. Zhong,Y., Banning,A.S., Cockayne,D.A., Ford,A.P.D.W., Burnstock,G. and McMahon,S.B. (2003). Bladder and cutaneous sensory neurons of the rat express different functional P2X receptors. *Neuroscience* **120**, 667-675.
1236. Hillman,K.A., Harada,H., Chan,C.M., Townsend-Nicholson,A., Moss,S.E., Miyamoto,K., Suketa,Y., Burnstock,G., Unwin,R. and Dunn,P.M. (2003). Chicken DT40 cells stably transfected with the rat P2X₇ receptor ion channel: a system suitable for the study of purine receptor-mediated cell death. *Biochemical Pharmacology* **66**, 415-424.
1237. Knight,G., Oliver-Redgate,R. and Burnstock,G. (2003). Unusual absence of endothelium-dependent or -independent dilatation to purines or pyrimidines in the rat renal artery. *Kidney International* **64**, 1389-1397.
1238. Coutinho-Silva,R., Stahl,L., Raymond,M.-N., Jungas,T., Verbeke,P., Burnstock,G., Darville,T. and Ojcius,D.C. (2003). Inhibition of chlamydial infectious activity due to P2X₇ receptor-dependent phospholipase D activation. *Immunity* **19**, 403-412.
1239. Cheung,K.-K., Ryten,M. and Burnstock,G. (2003). Abundant and dynamic expression of G protein-coupled P2Y receptors in mammalian development. *Developmental Dynamics* **228**, 254-266.
1240. Turner,C., Vonend,O., Chan,C.M., Burnstock,G. and Unwin,R.J. (2003). The pattern of distribution of selected ATP- sensitive P2 receptor subtypes in normal rat kidney: an immunohistological study. *Cells Tissues Organs* **175**, 105-117.
- *1241. Burnstock,G. (2003). Purinergic system.In: *Encyclopedic Reference of Molecular Pharmacology* Eds S. Offermanns and W. Rosenthal. Springer, Heidelberg/Berlin, pp.784-790
1242. Wynn,G., Rong,W., Xiang,Z. and Burnstock,G. (2003). Purinergic mechanisms contribute to mechanosensory transduction in the rat colorectum. *Gastroenterology* **125**, 1398-1409.
1243. Chalar,C., Richeri,A., Viettro,L., Chavez-Genaro,R., Bianchimano,P., Marmol,N.M., Crutcher,K., Burnstock,G., Cowen,T. and Brauer,M.M. (2003). Plasticity in developing rat uterine sensory nerves: the role of NGF and TrkA. *Cell and Tissue Research* **314**, 191-205.

1244. Ruan,H.Z. and Burnstock,G. (2003). Localisation of P2Y₁ and P2Y₄ receptors in dorsal root, nodose and trigeminal ganglia of the rat. *Histochemistry and Cell Biology* **120**, 415-426.
- *1245. Unwin,R.J., Bailey,M.A. and Burnstock,G. (2003). Purinergic signaling along the renal tubule: the current state of play. *News Physiol. Sci.* **18**, 237-241.
1246. Rong,W., Gourine,A., Cockayne,D.A., Xiang,Z., Ford,A.P.D.W., Spyer,K.M. and Burnstock,G. (2003). Pivotal role of nucleotide P2X₂ receptor subunit mediating ventilatory responses to hypoxia: knockout mouse studies. *Journal of Neuroscience* **23**, 11315-11321.
1247. Greig,A.V.H., Linge,C., Cambrey,A. and Burnstock,G. (2003). Purinergic receptors are part of a signalling system for keratinocyte proliferation, differentiation and apoptosis in human fetal epidermis. *Journal of Investigative Dermatology* **121**, 1145-1149.
1248. Greig,A.V.H., James,S.E., McGrouther,D.A., Terenghi,G. and Burnstock,G. (2003). Purinergic receptor expression in the regenerating epidermis in a rat model of normal and delayed wound healing. *Experimental Dermatology* **12**, 860-871.
1249. Kalmar,B., Greensmith,L., Malcangio,M., McMahon,S.B., Csermely,P. and Burnstock,G. (2003). The effect of treatment with BRX-220, a co-inducer of heat shock proteins, on sensory fibres of the rat following peripheral nerve injury. *Experimental Neurology* **184**, 636-647.
- *1250. Burnstock,G. (2004). Cotransmission. *Current Opinion in Pharmacology* **4**, 47-52.
1251. Van Genechten,J., Brouns,I., Burnstock,G., Timmermans,J.-P. and Adriaensen,D. (2004). Quantification of neuroepithelial bodies and their innervation in fawn-Hooded and Wistar rat lungs. *American Journal of Respiratory Cell and Molecular Biology* **30**, 20-30.
1252. Saitongdee,P., Becker,D.L., Milner,P., Knight,G. and Burnstock,G. (2004). Levels of gap junction proteins in coronary arterioles and aorta of hamsters exposed to the cold and during hibernation and arousal. *Journal of Histochemistry and Cytochemistry* **52**, 603-616.
1253. Knight,G. and Burnstock,G. (2004). The effect of pregnancy and the oestrus cycle on purinergic and cholinergic responses of the rat urinary bladder. *Neuropharmacology* **46**, 1049-1056.
1254. Ma,B., Ruan,H.-Z., Cockayne,D.A., Ford,A.P.D.W., Burnstock,G. and Dunn,P.M. (2004). Identification of P2X receptors in cultured mouse and rat parasympathetic ganglion neurones including P2X knockout studies. *Neuropharmacology* **46**, 1039-1048.
- *1255. Burnstock,G. (2004). Introduction: P2 receptors. *Current Topics in Medicinal Chemistry* **4**, 793-803.
1256. Bailey,M.A., Turner,C., Hus-Citharel,A., Marchetti,J., Imbert-Teboul,M., Milner,P., Burnstock,G. and Unwin,R. (2004). P2Y receptors present in the native and isolated rat glomerulus. *Nephron Physiology* **96**, P79-P90.
1257. Kieran,D.M., Kalmar,B., Dick,J.R.T., Riddoch-Contreras,J., Burnstock,G. and Greensmith,L. (2004). Treatment with arimocloamol, a co-inducer of heat shock

proteins, delays disease progression in ALS deficient mice. *Nature Medicine* **10**, 402-405.

1258. Xiang,Z. and Burnstock,G. (2004). P2X₂ and P2X₃ purinoceptors in the rat enteric nervous system. *Histochemistry and Cell Biology* **121**, 169-179.
- *1259. Robertson,D., Biaggioni,I., Burnstock,G. and Low,P.(2004). Primer on the autonomic nervous system, 2nd Edition, Elsevier, San Diego. pp. 1-459.
- *1260. Burnstock,G. (2004). The Autonomic Neuroeffector Junction. In: Primer on the autonomic nervous system, 2nd Edition. Eds D. Robertson, I. Biaggioni, G. Burnstock and P. Low. Elsevier, Amsterdam. pp.29-33.
- *1261. Burnstock,G. (2004). Purinergic Neurotransmission. In: Primer on the autonomic nervous system, 2nd Edition. Eds D. Robertson, I. Biaggioni., G. Burnstock and P. Low. Elsevier, Amsterdam. pp.60-65.
1262. King,B.F., Knowles,I., Burnstock,G. and Ramage,A. (2004). Investigation of the effects of P2 purinoceptor ligands on the micturition reflex in female urethane-anaesthetised rats. *British Journal of Pharmacology* **142**, 519-530.
1263. Ruan,H.-Z. and Burnstock,G. (2004). P2X₂ and P2X₃ receptor expression in the gallbladder of the guinea pig. *Autonomic Neuroscience: Basic and Clinical*. **111**, 89-96.
1264. Vonend,O., Turner,C., Chan,C.M., Loesch,A., Dell'Anna,G.C., Srari,S.K., Burnstock, G. and Unwin,R. (2004). Glomerular expression of the ATP-sensitive P2X₇ receptor in diabetic and hypertensive rat models. *Kidney International* **66**, 157- 166.
- *1265. Burnstock,G. (2004). 50 years of passionate commitment. *Cell and Molecular Life Sciences* **61** , 1693-1696.
1266. Ryten,M., Yang,S.Y., Dunn,P.M., Goldspink,G. and Burnstock,G. (2004). Purinoceptor expression in regenerating skeletal muscle in the mdx mouse model of muscular dystrophy and in satellite cell cultures. *FASEB J.* **18**, 1404-1406 (printed version) [Full version online (Epub, 2004, July 1, 34 pages)].
1267. Birder,L.A., Ruan,H.-Z., Chopra,B., Xiang,Z., Barrick,S., Buffington,C.A., Roppolo,J.R., Ford,A.P.D.W., de Groat,W.C. and Burnstock,G. (2004). Alterations in P2X and P2Y purinergic receptor expression in urinary bladder from normal cats and cats with interstitial cystitis. *Am. J. Physiol. Renal Physiol.* **287**, F1084-F1091.
1268. Xiang,Z. and Burnstock,G. (2004). Development of nerves expressing P2X₃ receptors in the myenteric plexus of rat stomach. *Histochemistry and Cell Biology* **122**, 111-119.
- *1269. Burnstock,G. (2004). A moment of excitement. Living History Series. The discovery of non-adrenergic, non-cholinergic neurotransmission. *Physiology News* **56**, 7-9.
- *1270. Burnstock,G. (2004). Adenosine triphosphate (ATP) as a neurotransmitter and neuromodulator. In: *Encyclopedia of Neuroscience CD-ROM. Revised 3rd edition*. Eds G. Adelman and B. H. Smith. Elsevier Science B.V., Amsterdam, The Netherlands.

1271. Calvert,R.C., Shabbir,M., Thompson,C.S., Mikhailidis,D.P., Morgan,R. and Burnstock,G. (2004). Immunocytochemical and pharmacological characterisation of P2-purinoceptor-mediated cell growth and death in PC-3 hormone refractory prostate cancer cells. *Anticancer Research* **24**, 2853-2859.
- *1272. Burnstock,G. (2004). Geoffrey Burnstock: Most Highly Cited Scientist. *Molecular Interventions* **4**, 192-195.
1273. Wynn,G., Bei,M., Ruan,H.-Z. and Burnstock,G. (2004). Purinergic component of mechanosensory transduction is increased in a rat model of colitis. *Am. J. Physiol Gastrointest Liver Physiol* **287**, G647-G657.
1274. Smith,N.C.E. and Burnstock,G. (2004). Mechanism underlying postjunctional synergism between responses of the vas deferens to noradrenaline and ATP. *European Journal of Pharmacology* **498**, 241-248.
1275. Milner,P., Bodin,P., Guiducci,S., Del Rosso,A., Kahaleh,M.B., Matucci-Cerinic,M. and Burnstock,G. (2004). Regulation of substance P mRNA expression in human dermal microvascular endothelial cells. *Clinical Experimental Rheumatology* **22**, S24-S27.
- *1276. Burnstock,G. and Knight,G.E. (2004). Cellular distribution and functions of P2 receptor subtypes in different systems. *International Review of Cytology* **240**, 31-304.
1277. Katugampola,H. and Burnstock,G. (2004). Purinergic signalling to rat ovarian smooth muscle: changes in P2X receptor expression during pregnancy. *Cells Tissues Organs* **178**, 33-47.
1278. Rong,W. and Burnstock,G. (2004). Activation of ureter nociceptors by exogenous and endogenous ATP in guinea pig. *Neuropharmacology* **47**, 1093-1101.
1279. Aliev, G., Castellani, R. J., Petersen, R. B., Burnstock, G., Perry, G. & Smith, M. A. (2004) Pathobiology of familial hypercholesterolemic atherosclerosis. *J. Submicrosc. Cytol. Pathol.*, **36**, 225-240.
1280. Turner,C., Ramesh,B., Srini,S.K.S., Burnstock,G. and Unwin,R. (2004). Altered P2 receptor expression in the Han:SPRD *cy*⁺ rat, a model of autosomal dominant polycystic kidney disease. *Cells Tissues Organs* **178**, 168-179.
1281. Ruan,H.-Z., Moules,E. and Burnstock,G. (2004). Changes in P2X₃ purinoceptors in sensory ganglia of the mouse during embryonic and postnatal development. *Histochemistry and Cell Biology* **122**, 539-551.
1282. Dunn,P.M., Kim,H.S., Jacobson,K.A. and Burnstock,G. (2004). Northern ring conformation of methanocarba-adenosine 5'-triphosphate required for activation of P2X receptors. *Drug Development Research* **61**, 227-232.
- 1282A. Ziganshin,A.U., Khaziakhmetov,D.F., Ziganshina,L.E., Khaziakhmetova,V.N., Jourjikiya,R.K., Ziganshin,B.A. and Burnstock,G. (2005). Varicose disease affects the P2 receptor-mediated responses of human greater saphenous vein. *Vascular Pharmacology* **42**, 17-21.
- *1283. Abbracchio,M.P., Burnstock,G., Boeynaems,J.-M., Barnard,E.A., Boyer,J.L., Kennedy,C., Miras-Portugal,M.T., King,B.F., Gachet,C., Jacobson,K.A. and Weisman,G.A. (2005). The recently deorphanized GPR80 (GPR99) proposed to be

the P2Y15 receptor is not a genuine P2Y receptor. *Trends in Pharmacological Sciences* **26**, 8-9.

1284. Ruan,H.-Z. and Burnstock,G. (2005). The distribution of P2X₅ purinergic receptors in the enteric nervous system of mouse. *Cell and Tissue Research* **319**, 191-200.
1285. Gayle,S. and Burnstock,G. (2005). Immunolocalisation of P2X and P2Y nucleotide receptors in the rat nasal mucosa. *Cell and Tissue Research* **319**, 27-36.
1286. Ziganshin,A.U., Kamaliev,R.R., Grishin,S.N., Ziganshina,L.E., Zefirov,A.L. and Burnstock,G. (2005). The influence of hypothermia on P2 receptor-mediated responses of frog skeletal muscle. *European Journal of Pharmacology* **509**, 187-193.
1287. Jiang,L., Bardini,M., Keogh,A., dos Remedios,C.G. and Burnstock,G. (2005). P2X₁ receptors are closely associated with connexin 43 in human ventricular myocardium. *International Journal of Cardiology* **98**, 291-297.
1288. Coutinho-Silva,R., Ojcius,D.C., Gorecki,D.C., Persechini,P.M., Bisaggio,R.C., Dunn,P.M. and Burnstock,G. (2005). Multiple P2X and P2Y receptor subtypes in mouse J774, spleen and peritoneal macrophages. *Biochemical Pharmacology* **69**, 641-655.
1289. Pinna,C., Glass,R., Knight,G., Bolego,C., Puglisi,L. and Burnstock,G. (2005). Purine- and pyrimidine-induced responses and P2Y receptor characterisation in the hamster proximal urethra. *British Journal of Pharmacology* **144**, 510-518.
1290. Coutinho-Silva,R., Stahl,L., Cheung,K.-K., Ojcius,D.C. and Burnstock,G. (2005). P2X and P2Y purinergic receptors on human intestinal epithelial carcinoma cell lines: effects of extracellular nucleotides on apoptosis and cell proliferation. *Am. J. Physiol. Gastrointest. Liver Physiol.* **288**, G1024-G1035.
1291. Coutinho-Silva, R., Knight, G. E. & Burnstock, G. (2005) Impairment of the splenic immune system in P2X₂/P2X₃ knockout mice. *Immunobiology*, **209**, 661-668.
1292. Ma, B., Rong, W., Dunn, P. M. & Burnstock, G. (2005) 17β-estradiol attenuates α,β-meATP-induced currents in rat dorsal root ganglion neurons. *Life Sciences*, **76**, 2547-2558.
1293. Ma, B., Ruan, H.-Z., Burnstock, G. & Dunn, P. M. (2005) Differential expression of P2X receptors on neurons from different parasympathetic ganglia. *Neuropharmacology*, **48**, 766-777.
1294. King, B. F., Liu, M., Townsend-Nicholson, A., Pfister, J., Padilla, F., Ford, A. P. D. W., Gever, J., Oglesby, I. B., Schorge, S. & Burnstock, G. (2005) Antagonism of ATP responses at P2X receptor subtypes by the pH indicator dye, Phenol red. *British Journal of Pharmacology*, **145**, 313-322.
1295. Bo, X. & Burnstock, G. (2005) Nucleotide receptor P2X₂. *AfCS Nature Molecule Pages*, **AfCS ID A001682**.
1296. Bo, X. & Burnstock, G. (2005) Nucleotide receptor P2X₃. *AfCS Nature Molecule Pages*, **AfCS ID A001683**.

1297. Liang, B., Bo, X. & Burnstock, G. (2005) Nucleotide receptor P2X₄. *AfCS Nature Molecule Pages*, **AfCS ID A001684**.
1298. White, N., Ryten, M., Clayton, E., Butler, P. & Burnstock, G. (2005) P2Y purinergic receptors regulate the growth of human melanomas. *Cancer Letters*, **224**, 81-91.
1299. Xiang, Z. & Burnstock, G. (2005) Changes in expression of P2X purinoceptors in rat cerebellum during postnatal development. *Dev. Brain Res.* **156**, 147-157.
1300. Ziganshin, A. U., Zefirova, J. T., Zefirova, T. P., Ziganshina, L. E., Hoyle, C. H. V. & Burnstock, G. (2005) Potentiation of uterine effects of prostaglandin F2 α by adenosine 5'-triphosphate. *Obstetrics and Gynecology*, **105**, 1429-1436.
1301. Xiang, Z. & Burnstock, G. (2005) Expression of P2X receptors on rat choroid plexus. *Neuroreport*, **16**, 903-907.
1302. Cheung, K.-K., Chan, W. Y. & Burnstock, G. (2005) Expression of P2X receptors during rat brain development and their inhibitory role on motor axon outgrowth in neural tube explant cultures. *Neuroscience*, **133**, 937-945.
1303. Braun, O. O., Jagroop, A., Wang, L., Mikhailidis, D. P., Burnstock, G. & Erlinge, D. (2005) Increased platelet purinergic sensitivity in peripheral arterial disease - a pilot study. *Platelets*, **16**, 261-267.
1304. White, N., Butler, P. & Burnstock, G. (2005) Human melanomas express functional P2X₇ receptors. *Cell Tissue Res.* **321**, 411-418. (online 1/7/05).
1305. Dunn, P. M., Gever, J., Ruan, H.-Z. & Burnstock, G. (2005) Developmental changes in heteromeric P2X_{2/3} receptor expression in rat sympathetic ganglion neurons. *Developmental Dynamics*, **234**, 505-511 (online 22/6/05).
1306. Cockayne, D. A., Dunn, P. M., Zhong, Y., Hamilton, S. G., Cain, G. R., Knight, G., Ruan, H.-Z., Ping, Y., Nunn, P., Bei, M., McMahon, S. B., Burnstock, G. & Ford, A. P. D. W. (2005) P2X₂ knockout mice and P2X₂/P2X₃ double knockout mice reveal a role for the P2X₂ receptor subunit in mediating multiple sensory effects of ATP. *J. Physiol.* **567**, 621-639. (online 16/6/05)
1307. Koshi, R., Coutinho-Silva, R., Cascabulho, C.M., Henrique-Pons, A., Knight, G.E., Loesch, A. & Burnstock, G. (2005) Presence of the P2X₇ purinergic receptor on immune cells that invade the rat endometrium during oestrus. *J. Reprod. Immunol.* **66**, 127-140.
- *1308. Hillman, K. A., Burnstock, G. & Unwin, R. (2005) The P2X₇ ATP receptor in the kidney: a matter of life or death? *Nephron Experimental Nephrology*, **101**, E24-E30 (online 5/8/05).
1309. Xiang, Z. and Burnstock, G. (2005) Expression of P2X receptors on rat microglial cells during early development. *Glia*, **52**, 119-126 (online 26/5/05).
1310. Afework, M. and Burnstock, G. (2005) Changes in P2Y₂ receptor localization on adrenaline- and noradrenaline containing chromaffin cells in the rat adrenal gland during development and ageing. *International Journal of Developmental Neuroscience*, **23**, 567-573 (online 2/9/05).
1311. Xiang, Z. and Burnstock, G. (2005) Distribution of P2Y₂ receptors in the guinea pig enteric nervous system and its coexistence with P2X₂ and P2X₃ receptors,

neuropeptide Y, nitric oxide synthase and calretinin. *Histochemistry and Cell Biology*, **124**, 379-390 (online 1/9/05).

1312. Ruan, H.-Z., Birder, L. A., de Groat, W. C., Tai, C., Roppolo, J., Buffington, A. & Burnstock, G. (2005) Localization of P2X and P2Y receptors in dorsal root ganglia of the cat. *Journal of Histochemistry & Cytochemistry*, **53**, 1273-1282 (online 27/5/05).
- *1313. Burnstock, G. (2005) Purinergic signalling; therapeutic potential. *Anales de la Real Academia Nacional de Farmacia*, **71**, 283-319.
1314. Banfi, C., Ferrario, S., De Vincenti, O., Ceruti, S., Fumagalli, M., Mazzola, A., D'Ambrosi, N., Volontè, C., Fratto, P., Vitali, E., Burnstock, G., Beltrami, E., Parolari, A., Polvani, G., Biglioli, P., Tremoli, E. & Abbracchio, M. P. (2005). P2 receptors in human heart: upregulation of P2X₆ in patients undergoing heart transplantation, interaction with TNF α and potential role in myocardial cell death. *Journal of Molecular and Cellular Cardiology*, **39**, 929-939 (online 19/10/05).
1315. Xiang, Z. & Burnstock, G. (2006) Distribution of P2Y₆ and P2Y₁₂ receptors: their colocalisation with calbindin, calretinin and nitric oxide synthase in the guinea pig enteric nervous system. *Histochemistry and Cell Biology*. **125**, 327-336 (online 30/9/05).
1316. Wallace, A., Knight, G. E., Cowen, T. & Burnstock, G. (2006) Changes in purinergic signalling in developing and ageing rat tail artery: Importance for temperature control *Neuropharmacology*, **50**, 191-208 (online 11/10/05).
- *1317. Burnstock, G. (2006) Purinergic P2 receptors as targets for novel analgesics. *Pharmacol. Therap.*, **110**, 433-454 (online 11/10/05).
1318. Banks, F. C. L., Knight, G. E., Calvert, R. C., Turmaine, M., Thompson, C. S., Mikhailidis, D. P., Morgan, R. J. & Burnstock, G. (2006) Smooth muscle and purinergic contraction of the human, rabbit, rat and mouse testicular capsule. *Biology of Reproduction*. **74**, 473-480. (online 9/11/05).
1319. Xiang, Z., Chen, M., Ping, J., Dunn, P. M., Lv, J., Jiao, B. & Burnstock, G. (2006) Microglial morphology and its transformation after challenge by extracellular ATP in vitro. *Journal of Neuroscience Research*, **83**, 91-101. (online 1/12/05).
1320. Chamary, V. L., Loizidou, M., Boulos, P. B. & Burnstock, G. (2006) Changes in vasoconstrictor and vasodilator neurotransmitters in nerves supplying arterioles in developing colorectal polyps. *Colorectal Disease*, **8**, 230-234. (online 29/11/05).
1321. Banks, F. C. L., Knight, G. E., Calvert, R. C., Morgan, R. J. & Burnstock, G. (2006) Alterations in purinergic and cholinergic components of contractile responses of isolated detrusor contraction in a rat model of partial bladder outflow obstruction. *BJU Int.*, **97**, 372-378. (online 22/11/05).
- *1322. Burnstock, G. (2006) Vessel tone and remodeling. *Nature Medicine – News and Views*, **12**, 16-17.
- *1323. Burnstock, G. (2006) Purinergic signalling. *British Journal of Pharmacology (75th Anniversary Issue)*, **147**, S172-S181.

1324. Giaroni, C., Knight, G., Zanetti, E., Lecchini, S., Frigo, G. & Burnstock, G. (2006) Postnatal development of P2 receptors in the murine gastrointestinal tract. *Neuropharmacology*, **50**, 690-704 (online 20/1/06).
1325. Ziganshin, A. U., Zaitzev, A. P., Khasanov, A. A., Shamsutdinov, A. F. & Burnstock, G. (2006) Term-dependency of P2 receptor-mediated contractile responses of isolated human pregnant uterus. *Eur. J. Obstet. Gynecol. Reprod. Biol.*, **129**, 128-134 (online 13/12/05).
1326. Ruan, H.-Z., Birder, L. A., Xiang, Z., Chopra, B., Buffington, A., Tai, C., Roppolo, J. R., de Groat, W. C. & Burnstock, G. (2006) Expression of P2X and P2Y receptors in the intramural parasympathetic ganglia of the cat urinary bladder. *American Journal of Physiology Renal Physiology*, **290**, F1143-F1152. (online 6/12/05).
- *1327. Burnstock, G. (2006) Historical Review: ATP as a neurotransmitter. *Trends in Pharmacological Sciences*, **27**, 166-176. (online 15/2/06).
- *1328. Burnstock, G. (2006) Pathophysiology and therapeutic potential of purinergic signalling. *Pharmacological Reviews*, **58**, 58-86.
- *1329. White, N. & Burnstock, G. (2006) P2 receptors and cancer. *Trends in Pharmacological Sciences*, **27**, 211-217. (online 10/3/06).
1330. Banks, F., Knight, G., Calvert, R. C., Thompson, C. S., Mikhailidis, D. P., Morgan, R. & Burnstock, G. (2006) The purinergic component of human vas deferens contraction. *Fertility and Sterility*, **85**, 932-939.
- *1331. Burnstock, G. (2006) Purinergic signalling - overview. In: *Novartis Foundation Symposium 276 Purinergic Signalling in Neuron-Glial Interactions* pp. 26-53. John Wiley & Sons, Ltd., Chichester.
1332. Orriss, I., Knight, G. E., Ramasingh, S., Burnstock, G. & Arnett, T. R. (2006) Osteoblast responses to nucleotides increases during differentiation. *Bone*, **39**, 300-309 (online 6/4/06).
1333. Van Nassauw, L., Costagliola, A., Van Op den bosch, J., Cecio, A., Vanderwinden, J.-M., Burnstock, G. & Timmermans, J.-P. (2006) Region-specific distribution of the P2Y₄ receptor in enteric glial cells and interstitial cells of Cajal within the guinea-pig gastrointestinal tract. *Autonomic Neuroscience: Basic and Clinical*, **126-127**, 299-306 (online 6/4/06).
1334. Xiang, Z., Lv, J., Jiang, P., Chen, C., Jiang, B. & Burnstock, G. (2006) Expression of P2X receptors on immune cells in the rat liver during postnatal development. *Histochemistry and Cell Biology*, **126**, 453-463 (online 13/4/06).
1335. Gever, J., Cockayne, D.A., Dillon, M.P., Burnstock, G. & Ford, A.P.D.W. (2006) Pharmacology of P2X channels. *Pflugers Arch*, **452**, 513-537 (online 29/4/06).
1336. Fields, D. & Burnstock, G. (2006) Purinergic signaling in neuron-glia interactions. *Nature Neuroscience Reviews*, **7**, 423-436.
1337. Xiang, Z., He, C. & Burnstock, G. (2006) P2X₅ receptors are expressed on neurons containing arginine vasopressin and neuronal nitric oxide synthase in the rat hypothalamus. *Brain Research*, **1099**, 56-63 (online 9/6/06).

1338. Volonté, C., Amadio, S., D'Ambrosi, N., Colpi, M. & Burnstock, G. (2006) P2 receptor web: complexity and fine-tuning. *Pharmacology and Therapeutics*, **112**, 264-280 (online 14/6/06).
1339. Ma, B., Wynn, G., Dunn, P. M. & Burnstock, G. (2006) Increased 5-HT₃-mediated signalling in pelvic afferent neurons from mice deficient in P2X₂ and/or P2X₃ receptor subunits. *Purinergic Signalling*, **2**, 481-489 (online 4/7/06).
- *1340. Abbracchio, M. P., Burnstock, G., Boeynaems, J.-M., Barnard, E. A., Boyer, J. L., Kennedy, C., Knight, G.E.; Fumagalli, M., Gachet, C., Jacobson, K. A. & Weisman, G. A. (2006) International Union of Pharmacology. Update and subclassification of the P2Y G protein-coupled nucleotide receptors: from molecular mechanisms and pathophysiology to therapy. *Pharmacological Reviews*. **58**, 281-341.
1341. Greig, A. V. H., Cuthill, S., Linge, C., Clayton, E. & Burnstock, G. (2006) P2X₅ and P2X₇ receptors in human warts and CIN 612 organotypic raft cultures of human papillomavirus infected keratinocytes. *Purinergic Signalling*, **2**, 509-515 (online 11/8/06).
1342. Wynn, G. & Burnstock, G. (2006) Adenosine 5'-triphosphate and its relationship with other mediators that activate pelvic afferent neurons in the rat colorectum. *Purinergic Signalling*, **2**, 517-526 (online 16/8/06).
1343. Grishin, S. N., Teplov, A. Y., Galkin, A. V., Devyataev, A. M., Zefirov, A. L., Mukhamedyarov, M. A., Ziganshin, A. U., Burnstock, G. & Palotás, A. (2006) Different effects of ATP on the contractile activity of mice diaphragmatic and skeletal muscles. *Neurochem. Int.* **49**, 756-763 (online 8/8/06).
1344. Metcalfe, M. J., Baker, D. M. & Burnstock, G. (2006) Purinoceptor expression on keratinocytes reflects their function on the epidermis during chronic venous insufficiency. *Arch. Dermatol. Res.*, **298**, 301-307 (online 12/9/06).
1345. Burnstock, G. & Arnett, T. R. (2006) *Edited Monograph: Nucleotides and Regulation of Bone Cell Function*. Taylor & Francis Group, Boca Raton, Florida, pp 1-207.
1346. Turner, C. M., Tam, F., Lai, P.-C., Tarzi, R. M., Burnstock, G., Pusey, C. D., Cook, H. T. & Unwin, R. J. (2007) Increased expression of the pro-apoptotic ATP-sensitive P2X₇ receptor in experimental and human glomerulonephritis. *Nephrology Dialysis Transplantation*, **22**, 386-395 (online 13/10/06).
1347. Grant, K., Knowles, J., Dawas, K., Burnstock, G., Taylor, M. & Loizidou, M. (2007) Mechanisms of endothelin 1-stimulated proliferation in colorectal cancer cell lines. *British Journal of Surgery*, **94**, 106-112 (online 31/10/06).
1348. Metcalfe, M. J., Baker, D. M., Turmaine, M. & Burnstock, G. (2007) Alterations in purinoceptor expression in human long saphenous vein during varicose disease. *Eur. J. Vasc. Endovasc. Surg.*, **33**, 239-250 (online 24/10/06).
- *1349. Burnstock, G. (2007) Purine and pyrimidine receptors. *Cellular and Molecular Life Sciences*, **64**, 1471-1483 (online 19/3/07).
1350. Coutinho-Silva, R., Robson, T., Beales, P.E. & Burnstock, G. (2007) Changes in expression of P2X₇ receptors in NOD mouse pancreas during the development of diabetes. *Autoimmunity*, **40**, 108-116.

- *1351. Burnstock, G. (2007) Physiology and pathophysiology of purinergic neurotransmission. *Physiol. Rev.*, **87**, 659-797.
1352. Bailey, M. A., Shirley, D. G., King, B. F., Burnstock, G. & Unwin, R. J. (2007) Extracellular nucleotides and renal function. In: *The Kidney: Physiology and Pathophysiology, 4th Edition* (eds R. J. Alpern & S. C. G. Herbert), Elsevier, San Diego, pp. 425-443.
1353. Johansson, P. A., Burnstock, G., Dziegielewska, K. M., Guida, E., McIntyre, P. & Saunders, N. R. (2007) Expression and localisation of P2 nucleotide receptor subtypes during development of the lateral ventricular choroid plexus of the rat. *Eur J Neurosci*, **25**, 3319-3331.
1354. Khanam, T. & Burnstock, G. (2007) Changes in expression of P2X₁ receptor and Connexin 43 in the rat myometrium during pregnancy. *Fertility and Sterility*, **88** (Suppl 2), 1174-1179 (online 8/6/07).
1355. Orriss, I. R., Utting, J. C., Brandao-Burch, A., Colston, K., Grubb, B. R., Burnstock, G. & Arnett, T. R. (2007) Extracellular nucleotides block bone mineralisation *in vitro*: evidence for dual inhibitory mechanisms involving both P2Y₂ receptors and pyrophosphate. *Endocrinology*, **148**, 4208-4216 (online 14/6/06).
1356. Cheung, K.-K., Coutinho-Silva, R., Chan, W. Y. & Burnstock, G. (2007) Early expression of adenosine 5'-triphosphate-gated P2X₇ receptors in the developing rat pancreas. *Pancreas*, **35**, 164-168.
1357. Ryten, M., Koshi, R., Knight, G. E., Turmaine, M., Dunn, P. M., Cockayne, D. A., Ford, A. P. D. W. & Burnstock, G. (2007) Abnormalities in neuromuscular junction structure and skeletal muscle function in mice lacking the P2X₂ nucleotide receptor. *Neuroscience*, **148**, 700-711 (online 17/7/07).
- *1358. Burnstock, G. (2008) Non-synaptic transmission at autonomic neuroeffector junctions. *Neurochemistry International*, **52**, 14-25. (online 3/4/07).

1359. Shabbir, M., Ryten, M., Thompson, C. S., Mikhailidis, D. P. & Burnstock, G. (2008) Purinergic receptor-mediated effects of ATP in high-grade bladder cancer. *BJU International*, **101**, 106-112. (online 17/10/07).
- *1360. Erlinge, D. & Burnstock, G. (2008) P2 receptors in cardiovascular physiology and disease. *Purinergic Signalling*, **4**, 1-20. (online 21/9/07).
1361. Shabbir, M., Ryten, M., Thompson, C. S., Mikhailidis, D. P. & Burnstock, G. (2008) Characterisation of calcium-independent purinergic receptor-mediated apoptosis in hormone refractory prostate cancer. *BJU Int.*, **101**, 352-359. (online 13/11/07).
1362. Burnstock, G. (2008) Dual control of vascular tone and remodelling by ATP released from nerves and endothelial cells. *Pharmacological Reports*, **60**, 12-20.
1363. Calvert, R. C., Khan, M. A., Thompson, C. S., Mikhailidis, D. P. & Burnstock, G. (2008) A functional study of purinergic signalling in the normal and pathological rabbit corpus cavernosum. *BJU Int.* **101**, 1043-1047. (online 8/1/08).
1364. Birch, D. J., Turmaine, M., Boulos, P. B. & Burnstock, G. (2008) Sympathetic innervation of human mesenteric artery and vein. *J Vasc Res*, **45**, 323-332. (online 3/3/08).
1365. Birch, D. J., Knight, G. E., Boulos, P. B. & Burnstock, G. (2008) Analysis of the innervation of human mesenteric vessels in non-inflamed and inflamed bowel - a confocal and functional study. *Neurogastroenterology and Motility*, **20**, 660-670. (online 19/2/08).
1366. Shabbir, M., Thompson, C. S., Jarmulowicz, M., Mikhailidis, D. P. & Burnstock, G. (2008) Effect of extracellular ATP on the growth of hormone refractory prostate cancer *in vivo*. *BJU Int.* **102**, 108-112. (online 5/3/08).
1367. Burnstock, G. & De Ryck, M. (2008) UCB Pharma Research Day 25th October 2007. Glia-neuron interactions and purinergic receptors in neurological disorders. *Purinergic Signalling*, **4**, 79-84.
- *1368. Burnstock, G. (2008) The journey to establish purinergic signalling in the gut. *Neurogastroenterology and Motility*, **20 (Supplement 1)**, 8-19.
- *1369. Burnstock, G. (2008) Invited Topical Review. Unresolved issues and controversies in purinergic signalling. *Journal of Physiology*, **586**, 3307-3312. (online 22/5/08).
1370. Greig, A. V. H., Linge, C. & Burnstock, G. (2008) Purinergic receptors are part of a signalling system for proliferation and differentiation in distinct cell lineages in human anagen hair follicles. *Purinergic Signalling*, **4**, 331-338. (online 27/5/09).
- *1371. Burnstock, G. (2008) Purinergic signalling and disorders of the central nervous system. *Nature Reviews Drug Discovery*, **7**, 575-590. (online July 2008).
1372. Kumaria, A., Tolia, C. M. & Burnstock, G. (2008) ATP signalling in epilepsy. *Purinergic Signalling*, **4**, 339-346. (online 21/6/09).
1373. Ma, B., Yu, L., Fan, J., Ni, X. & Burnstock, G. (2008) Pharmacological properties of P2X receptors on otic parasympathetic ganglion neurons. *Life Sciences*, **83**, 185-191. (online 18/6/08).
1374. Burnstock, G. (2008) Commentary. Purinergic receptors as future targets for treatment of functional GI disorders. *Gut*, **57**, 1193-1194. (online September 2008).

1375. Xiang, Z., Xiong, Y., Yan, N., Li, X., Mao, Y., Ni, X., He, C., LaMotte, R. H., Burnstock, G. & Sun, J. (2008) Functional up-regulation of P2X₃ receptors in the chronically compressed dorsal root ganglia. *Pain*, **140**, 23-34. (online 19/8/09).
1376. Burnstock, G. (2008) Endothelium-derived vasoconstriction by purines and pyrimidines. *Circulation Research*, **103**, 1056-1057. (online 7/11/08).
1377. Burnstock, G. (2008) Purinergic signalling in atherosclerosis and restenosis. *IAS website*. <http://www.athero.org/commentaries/comm770.pdf>
1378. Guo, W., Xu, X., Gao, X., Burnstock, G., He, C. & Xiang, Z. (2008) Expression of P2X₅ receptors in the mouse central nervous system. *Neuroscience*, **156**, 673-692. (online 7/8/09).
1379. Calvert, R. C., Thompson, C. S. & Burnstock, G. (2008) ATP release from the human ureter on distension and P2X₃ receptor expression on suburothelial sensory nerves. *Purinergic Signalling*, **4**, 377-381. (online 26/9/08).
- *1380. Burnstock, G. (2008) Purinergic system. In: *Encyclopedia of Molecular Pharmacology, 2nd Edition* (eds S. Offermanns & W. Rosenthal), Springer, Heidelberg/Berlin, pp.
- *1381. Burnstock, G. (2009) Purinergic Signalling: Past, Present and Future. *Brazilian Journal of Medical and Biological Research*, **42**, 3-8. (online 3/10/08).
1382. Vrbová, G. & Burnstock, G. (2009) Reinnervation of transplanted vas deferens by cholinergic nerves normally supplying skeletal muscle. *Experimental Neurology*, **215**, 264-270. (online 31/10/08).
- *1383. Burnstock, G. (2009) Purinergic Cotransmission. *Experimental Physiology*, **94**, 20-24. (online 22/8/08).
- *1384. Abbracchio, M.P., Burnstock, G., Verkhratsky, A. & Zimmermann, H. (2009) Purinergic signalling in the nervous system: an overview. *Trends in Neurosciences*, **32**, 19-29. (online 11/11/08). (Also included front cover of TiNS.)
- *1385. Fountain, S.J. & Burnstock, G. (2009) An evolutionary history of P2X receptors. *Purinergic Signalling*. **5**, 269-272. (online 18/11/08).
- *1386. Burnstock, G. (2009) Adenosine triphosphate (ATP). In: *Encyclopedia of Neuroscience 4th Edition* (ed L.R. Squire), Academic Press, Oxford, pp. 105-113. (online 14/11/08).
- *1387. Burnstock, G. (2009) Autonomic neuroeffector junction. In: *Encyclopedia of Neuroscience 4th Edition* (ed L.R. Squire), Academic Press, Oxford, pp. 993-1001. (online 14/11/08).
- *1388. Burnstock, G. (2009) Cotransmission. In: *Encyclopedia of Neuroscience 4th Edition* (ed L.R. Squire), Academic Press, Oxford, pp. 247-254. (online 14/11/08).
- *1389. Burnstock, G. (2009) Purines, purinoceptors - molecular biology, overview. In: *Encyclopedia of Neuroscience 4th Edition* (ed L.R. Squire), Academic Press, Oxford, pp.1253-1262. (online 14/11/08).
- *1390. Shabbir, M. & Burnstock, G. (2009) Purinergic receptor-mediated effects of ATP in urogenital malignant diseases. *Int J Urol*, **16**, 143-150. (online 4/12/08).
- *1391. Burnstock, G. & Verkhratsky, A. (2009) Evolutionary origins of the purinergic signalling system. *Acta Physiologica*, **195**, 415-447. (online 12/2/09).

1392. Ziganshin, A.U., Kamaliev, R.R., Grishin, S.N., Ziganshin, B.A., Butinova, N.V., Zefirov, A.L. & Burnstock, G. (2009) Interaction of hydrocortisone with ATP and adenosine in frog skeletal muscle. *Eur. J. Pharmacol.*, **607**, 54-59. (online 21/2/09).
1393. Orriss, I.R., Knight, G.E., Utting, J.C., Taylor, S.E.B., Burnstock, G. & Arnett, T.R. (2009) Hypoxia stimulates vesicular ATP release from rat osteoblasts. *J. Cell. Physiol.*, **220**, 155-162. (online 3/3/09).
- *1394. Verkhatsky, A., Krishtal, O.A. & Burnstock, G. (2009) Purinoceptors in neuroglia. *Mol. Neurobiol.*, **39**, 190-208. (online 13/3/09).
- *1395. Burnstock, G. (2009) Autonomic Neurotransmission: 60 Years Since Sir Henry Dale. *Annual Review of Pharmacology and Toxicology*, **49**, 1-30. (online 3/10/08).
1396. Burnstock, G. (2009) Purinoceptors in the upper urinary tract. In: *Aspects of pharmacology of the pyeloureter with clinical perspectives* (eds U. Simonsen, F. Andreasen & J. Mortensento), Research Signpost, Kerala, India, pp. 77-84.
1397. Gür, S., Kadowitz, P.J., Abdel-Mageed, A.S., Kendirci, M., Sikka, S.C., Burnstock, G. & Hellstrom, W.J.G. (2009) Management of erectile function by purinergic P2 receptors in diabetic rat penis. *Journal of Urology*, **181**, 2375-2382. (online 19/3/09).
1298. Taylor, S.R.J., Turner, C.M., Elliott, J.I., Hewitt, R., Pickering, M., Cook, H.T., Burnstock, G., Pusey, C.D., Unwin, R. & Tam, F.W.K. (2009) P2X₇-deficiency ameliorates accelerated nephrotoxic nephritis in mice. *Journal of the American Society of Nephrology*, **20**, 1275-1281. (online 23/4/09).
1399. Gourine, A.V., Wood, J. & Burnstock, G. (2009) Purinergic signalling in autonomic control. *Trends in Neurosciences*, **32**, 241-248. (online 8/4/09).
1400. White, N., Knight, G.E., Butler, P.E.M. & Burnstock, G. (2009) An *in vivo* model of melanoma: treatment with ATP. *Purinergic Signalling*, **5**, 327-333. (online 4/4/09).
1401. Banks, F.C.L., Calvert, R.C., Thompson, C.M. & Burnstock, G. (2009) Changing P2X receptor expression on maturing sperm in the epididymides of mice, hamsters, rats and man. *Fertility & Sterility*, [Epub ahead of print 30/3/09].
- *1402. Burnstock, G. (2009) Purinergic receptors and pain. *Current Pharmaceutical Design*, **15**, 1717-1735. (online 30/3/09).
1403. Fu, J., Yu, Q., Guo, W., He, C., Burnstock, G. & Xiang, Z. (2009) P2X receptors are expressed on the neurons containing luteinizing hormone-releasing hormone in the mouse hypothalamus. *Neuroscience Letters*, **458**, 32-36. (online 11/4/09).
1404. Burnstock, G. (2009) Purinergic cotransmission. 'Hot Topic'. *F1000 Biology Reports*, **1**, 49. (<http://www.f1000biology.com/reports/10.3410/B1-46/>)
1405. Hernández, M., Malone-Lee, J., Knight, G.E., Wildman, S. & Burnstock, G. (2009) Role of ATP and related purines in the inhibitory neurotransmission of the pig urinary bladder neck. *British Journal of Pharmacology*, **157**, 1463-1473. (online 25/6/09).
- *1406. Burnstock, G. (2009) Purinergic regulation of vascular tone and remodelling. *Autonomic and Autocoid Pharmacology*, **29**, 63-72. (online July, 2009).
1407. Fan, J., Yu, L., Zhang, W., Zhao, T., Yu, Y., Gao, J., Zou, D., Ni, X., Ma, B. & Burnstock, G. (2009) Estrogen altered visceromotor reflex and P2X₃ mRNA expression in a rat model of colitis. *Steroids*, **74**, 956-962 (online 21/6/09).

1408. Burnstock, G. (2009) Acupuncture: a novel hypothesis for the involvement of purinergic signalling. *Medical Hypotheses*, **73**, 470-472. (online 22/7/09).
1409. Burnstock, G. (2009) Purines and Sensory Nerves. *Handbook of Experimental Pharmacology. Sensory Nerve Biology*, Volume 194, (Eds D. Spina & B. Canning) Heidelberg, Springer, 333-392.
1410. Loesch, A., Unwin, R., Gandhi, V. & Burnstock, G. (2009) Sympathetic nerve varicosities in close apposition with basolateral membranes of collecting duct epithelial cells of rat kidney. *Nephron Physiology*, **113**, 15-21. (online 14/8/09).
1411. Guo, W., Sun, J., Xu, X., Burnstock, G., He, C. & Xiang, Z. (2009) P2X receptors are differentially expressed on vasopressin- and oxytocin-containing neurons in the supraoptic and paraventricular nuclei of rat hypothalamus. *Histochem Cell Biol*, **131**, 29-41. (online 12/9/08)
- *1412. Khakh, B.S. & Burnstock, G. (2009) The Double Life of ATP. *Scientific American*, **301**, 60-67.
- *1413. Burnstock, G. (2009) Purinergic mechanosensory transduction and visceral pain. *Molecular Pain*, **5**, 69. (online 30/11/09)
1414. Robson, S.C. & Burnstock, G. (2009) Purinergic signalling in endothelial cells. In: *Extracellular ATP and Adenosine as Regulators of Endothelial Cell Function* (eds E. Gerasimovskaya & E. Kaczmarek), Springer, Berlin. (Due out Dec 2009)
1415. Waghbi, M.C., Coutinho-Silva, R., Feige, J.-J., Higuchi, M.L., Becker, D.L., Burnstock, G. & Araújo-Jorge, T.C. (2009) Gap junction reduction in cardiomyocytes following transforming growth factor- β treatment and *Trypanosoma cruzi* infection. *Memorias do Instituto Oswaldo Cruz*, **104**, 1083-1090.
1416. Yu, Q., Sun, J., Guo, W., Fu, J., Xu, X., Burnstock, G., He, C. & Xiang, Z. (2010) Expression of P2X₆ receptors in the enteric nervous system of the rat gastrointestinal tract. *Histochem Cell Biol*, **133**, 177-188. (online 28/11/09).
- *1417. Burnstock, G. & Verkhratsky, A. (2010) Long-term (trophic) purinergic signalling: purinoceptors control cell proliferation, differentiation and death. *Cell Death and Disease*, **1**, e9.
- *1418. Burnstock, G. & Verkhratsky, A. (2010) Vas deferens - a model used to establish sympathetic cotransmission. *Trends in Pharmacological Sciences*, [**Online ahead of print 12/1/10**].

PUBLICATIONS IN PRESS

- Burnstock, G. (2010) Structural and chemical organisation of the autonomic nervous system with special reference to non-adrenergic, non-cholinergic transmission. In: *Autonomic Failure. A Textbook of Clinical Disorders of the Autonomic Nervous System. 5th Edition* (eds C. J. Mathias & R. Bannister), Oxford University Press, Oxford.
- Gever, J.R., Rothschild, S., Henningsen, R., Martin, R., Hackos, D., Panicker, S., Milla, M.E., Oglesby, I., Dillon, M.P., Burnstock, G. & Ford, A.P.D.W. (2010) RO-4, a novel, potent orally bioavailable P2X₃/P2X_{2/3} antagonist. *British Journal of Pharmacology*.
- Burnstock, G. (2009) The expanding field of purinergic signalling. Lectio Magistralis on the occasion of the Copernicus Gold Medal Award, Ferrara Italy June 3rd, 2009.
- Burnstock, G. & Sawynok, J. (2009) ATP and adenosine receptors and pain. In: *Pharmacology of Pain* IASP Press.
- Gür, S., Sikka, S.C., Knight, G.E., Burnstock, G. & Hellstrom, W.J.G. (2009) Modification of contractile properties of the prostatic portion of the vas deferens from nitric oxide-deficient hypertensive rats: effect of sildenafil treatment. *Asian J. Androl.*
- Orriss, I.R., Burnstock, G. & Arnett, T.R. (2010) Purinergic signalling and bone remodelling. *Current Opinion in Pharmacology*.