

# Index

- abortive antimigraine medication 123
- absenteeism 25, 29
- acetylcholine 74
- adhesion molecule, endothelial 122
- $\alpha$ -adrenergic-2 receptor 101
- A $\delta$ -fiber 91, 161
- albumin, 99-technetium labeled 76
- allodynia 4, 77, 162
- allopregnanolone 74
- $\gamma$ -aminobutyric acid 73, 99
- amitriptyline 151
- amyl nitrite 6, 7
- analgesic, non-steroidal anti-inflammatory
  - 71, 149
- antalarmin 119, 123
- antidepressant, tricyclic 151
- antidromic trigeminal ganglion stimulation 119
- antidromic vasodilation 2
- anxiety 23
- arteriovenous anastomoses 17, 78, 133
- ascending reticular activating system 12
- associated migraine symptom 12
- aviptriptan 60
- axon reflex flare 2
- azatadine 119, 124
  
- baclofen 74
- benzoylamino-benzopyran compound 137
- beta-blocker 147
- BI-BN4096BS 141
- bicuculline 74
  
- blood oxygenation-level dependant signal
  - 8, 9, 80
- BMS-181885 60
- bosetan 59, 137
- brain arteriole, receptors for corticotrophin-releasing hormone 122
- brain spectroscopy 10
- brainstem 12, 13
  
- calcitonin gene-related peptide 2, 4, 5, 18, 55,
  - 71, 92, 96, 119, 133, 141, 161
- calcium channelopathy 12
- calcium-channel blocker 152
- capsaicin 12, 68, 101, 123, 133
- carbon dioxide 6
- 5-carboxamide tryptamine 17, 136
- carotid blood flow 17
- cat saphenous vein 17
- catecholaminergic nerve fiber 115
- cavernous sinus 76
- cerebral blood flow 7, 8, 12
- cerebral circulation 10, 11
- cerebral cortex 11
- cerebral vasoconstriction 6, 10, 11
- cerebral vasodilation 6, 7, 10, 11
- cerebrospinal fluid 1, 5, 6, 119
- cervical ganglion stimulation 121
- C-fiber 91, 121, 161
- c-fos expression 69, 80
- chiropractic manipulation 27
- chlorophenylpiperazine 98

- cholinergic nerve fiber 115
- chronic paroxysmal hemicrania 75
- cingulate cortex 12, 13
- cluster headache 76, 121
- cortical spreading depression 65, 79, 98
- corticotrophin-releasing hormone 119, 122–124
- CP-122288 59, 97, 135–137
- cutaneous allodynia 77, 162
- cyclic AMP 72
- cyclo-oxygenase 1 100, 149
- cyproheptadine 150
  
- depression 23, 65, 79, 98
- diencephalon 120
- diffusion-weighted echo-planar magnetic resonance imaging 79
- dihydroergotamine 14, 16, 17
- disodium cromoglycate 120
- dog saphenous vein 17
- dorsal horn 122
- dorsal root ganglion 122
- dura mater 65, 115, 133
- dural blood vessel, diameter 79
- dural inflammation 162
  
- electrical stimulation 69, 77
- emergency room use 27
- emotional stress 119
- endothelial adhesion molecule 122
- endothelin 59, 137
- endothelin receptor 137
- endothelin-receptor antagonist 137
- enkephalin 5, 6
- epidemiology of migraine 21
- epilepsy 23
- episodic ataxia type 2 80
- ergot 14, 17, 18, 70
- ergot, modes of action 14
- ergotamine 1, 4, 14, 15, 133
- exercise-induced migraine aura 9
- external jugular vein 4, 5, 17, 18
  
- extracranial arterial vasodilation 1, 10
- extracranial artery 1, 3, 10, 15
- extracranial tissue 11, 139
- extracranial vasodilation 12
- extravasation receptor 136
  
- familial hemiplegic migraine 80
- fiberoptic probe 122
- FK-888 140
- flunarizine 152
- fluoxetine 151
- flushing 122
  
- GABA-A receptor 100
- gamma-aminobutyric acid (GABA) 151
- gluceptate, 99-technetium 120
- glutamate 80
- glutamic acid decarboxylase 74
- GR-205171 78, 139
- granulocyte infiltration 122
  
- headache, daily 23
- hemicrania, chronic paroxysmal 75
- hemiplegic migraine, familial 80
- histamine/serotonin-receptor antagonist 119, 124
- histamine-3 receptor 101, 119
- histamine-3-receptor agonist 124
- hospitalization 27
- hyperalgesia 162
- hyperemia, reactive 8
- hypothalamic-pituitary-adrenal axis 119
- hypothalamus 115
  
- ICAM-1 152
- IL-2-receptor 122
- IL-6 119
- immobilization stress 119, 124
- indomethacin 150
- inflammation 2, 10–12, 14, 18, 56, 65, 76, 77, 91, 115, 119, 124, 133, 162
- inflammatory peptide, source 161
- inflammatory soup 76

- interleukin (IL)-3, -4 and -6 115  
intracranial arteries 1  
intracranial histamine 115  
intracranial sensitivity, increased 162  
intravital microscopy 79  
ischemia 80  
itching 122
- L-758298 139, 140  
lanepitant 138, 141  
laser beam excitation 122  
leaner mouse 80  
leukemic mast cell 123  
leukocyte 122  
limbic system 12  
localization of mast cells, with neurons 115  
LY-303870 (lanepitant) 138, 139, 141  
LY-334370 97, 135, 136, 140
- mania 23  
mast cell, allergic reaction 115  
mast cell hyperplasia 121  
mast cell stabilizer 120  
mastocytosis 121  
meninge 115  
mesencephalon 12–14  
meta-chlorophenylpiperazine 98  
n<sup>α</sup>-methylhistamine 119  
methysergide 150  
migraine abortion, pharmacology 14  
migraine attack 10, 11  
migraine attack, pathogenesis 10  
migraine aura 6, 8–12, 65, 79  
migraine aura, pathogenesis 6  
migraine aura without headache 12  
migraine generator 12, 13  
migraine headache 1, 10, 13–15, 18, 119  
migraine headache, pathogenesis 1, 10, 11, 124  
migraine mechanism 65  
migraine pathogenesis, parallel concept 11  
migraine pathogenesis, sequential concept 10  
migraine prevention 141, 147  
migraine process 11, 12  
migraine trigger 11, 13  
migraine with aura 1, 7–11  
migraine without aura 8, 10–12  
migrainous infarction 10  
migrainous vasodilation 2  
mononuclear leukocyte 122  
muscimol 74
- n-methyl-d-aspartate (NMDA) 151  
nerve fiber 115  
nerve growth factor 99  
neurogenic inflammation 2, 10–12, 14, 18, 56, 65, 91, 119, 124, 133  
neurogenic vasodilation 58, 97, 133  
neuroimaging technique 162  
neuroinflammatory disorder 119  
neurokinin A 3, 93, 161  
neurokinin B 93  
neurokinin-1 receptor 140  
neurokinin-1-receptor antagonist 57, 78, 124  
neurokinin-1-receptor knockout mice 124  
neuronal dysfunction 119  
neuropeptide, sensory 119, 124  
neuropeptide  $\gamma$  93  
neuropeptide K 93  
neuropeptide Y-1 75  
neurosensitizing molecule 119  
NF- $\kappa$ B 149  
N<sup>G</sup>-nitro-L-arginine 122  
nitric oxide 59, 70, 101, 119, 137  
nitroglycerin 69, 101  
non-prescription medication 25, 27  
non-steroidal anti-inflammatory analgesic 71, 149  
nucleus caudalis 124
- occipital cortex 8  
oligemia 8  
otic ganglion 75

- pain medication 25
- pain threshold 3–5, 18
- pain transmission 124
- parasympathetic nervous system 72, 73
- parasympathetic sphenopalatine ganglion
  - stimulation 121
- peptidergic nerve fiber 115
- periaqueductal gray 14
- peri-infarct depolarization 80
- peripheral nerve fiber 124
- phonophobia 12
- photophobia 12
- physical stress 119
- pizotifen 150
- plasma-protein extravasation 67, 75, 92, 124, 133, 137, 140
- PNU-142633 134–136
- positron emission tomography 12–14
- postjunctional inhibitor 133
- prejunctional inhibitor 133, 134
- pro-inflammatory action 122
- propranolol 147
- prostaglandin 72, 100
- prostaglandin E2 72
- prostanoid receptor EP3 101
  
- quality of life 24, 25
  
- race 22
- reactive hyperemia 8
- reactive vasodilation 10, 11
- relaxation therapy 27
- retina 75, 162
- rizatriptan 17, 123
- RO-470203 137, 138
  
- SB-220453 137
- scanning electron microscopy 115
- scintillating scotoma 6, 7
- selective serotonin re-uptake inhibitor 151
- selective serotonin-1D-receptor agonist 134
- selective serotonin-1F-receptor agonist 135
  
- self-relaxation 123
- sensitization 77, 161
- sensory neuron 119
- sensory neuropeptide 119, 124
- sensory nucleus of the trigeminal nerve 124
- serotonin 73, 96, 124
- serotonin-1A receptor 98, 146
- serotonin-1B receptor 58, 70, 73, 97, 134
- serotonin 1B/D-receptor agonist 58, 134
- serotonin-1D receptor 134
- serotonin-1F receptor 70, 97
- serotonin-1F-receptor agonist 97
- serotonin-2B receptor 73, 98, 146
- serotonin 1-like receptor 17
- serotonin receptor 17, 58, 70, 73, 97, 98, 134, 146
- serotonin-7 receptor 146
- single-photon emission computed tomography 76
- social causation 23
- social selection 24
- socioeconomic status 23, 24
- somatostatin 101
- specialist consultation 26
- sphenopalatine ganglion 75
- spreading depression 6, 10, 12, 119, 124, 137
- spreading excitation 10, 12
- stress 119, 124
- stress hormone 124
- stroke 23
- substance P 2, 55, 68, 93, 96, 115, 133, 140, 161
- sumatriptan 12, 17, 18, 97, 123, 133
- sumatriptan analogue 135
- superficial temporal artery 2, 3, 14, 16, 17,
- superior sagittal sinus 71, 77
- sympathetic ganglion 122
- sympathetic nervous system 2, 12
  
- tachykinin 93
- 99-technetium labeled albumin 76
- 99-technetium-glucaptate 120

- 
- temporal artery 2  
tension-type headache 23  
T lymphocyte 122  
tottering mouse 80  
transformed migraine 22  
tricyclic antidepressant 151  
trigeminal ganglion 58, 119, 121  
trigeminal ganglion stimulation 121  
trigeminal nerve, sensory nucleus 124  
trigeminal nerve fiber 65, 161  
trigeminal system 91  
trigeminovascular system 91  
triptan 17, 18, 70  
triptan, modes of action 17  
tumor necrosis factor (TNF) 119
- umbilical vein 122  
unemployment 23
- urine 123  
urocortin 120
- valproate 151  
vanilloid-1 receptor 101  
vascular permeability 119  
vasoactive intestinal polypeptide 72, 75, 119  
vasodilation 1, 2, 6, 7, 10–12, 58, 97, 119, 133  
VCAM-1 152  
verapamil 152  
visual cortex 9, 11  
visual migraine aura 80
- 4991W93 59, 134, 135
- Xenon-clearance technique 7, 8
- zolmitriptan 17

## The PIR-Series

### Progress in Inflammation Research

Homepage: <http://www.birkhauser.ch>

Up-to-date information on the latest developments in the pathology, mechanisms and therapy of inflammatory disease are provided in this monograph series. Areas covered include vascular responses, skin inflammation, pain, neuroinflammation, arthritis cartilage and bone, airways inflammation and asthma, allergy, cytokines and inflammatory mediators, cell signalling, and recent advances in drug therapy. Each volume is edited by acknowledged experts providing succinct overviews on specific topics intended to inform and explain. The series is of interest to academic and industrial biomedical researchers, drug development personnel and rheumatologists, allergists, pathologists, dermatologists and other clinicians requiring regular scientific updates.

#### Available volumes:

- T Cells in Arthritis*, P. Miossec, W. van den Berg, G. Firestein (Editors), 1998  
*Chemokines and Skin*, E. Kownatzki, J. Norgauer (Editors), 1998  
*Medicinal Fatty Acids*, J. Kremer (Editor), 1998  
*Inducible Enzymes in the Inflammatory Response*, D.A. Willoughby, A. Tomlinson (Editors), 1999  
*Cytokines in Severe Sepsis and Septic Shock*, H. Redl, G. Schlag (Editors), 1999  
*Fatty Acids and Inflammatory Skin Diseases*, J.-M. Schröder (Editor), 1999  
*Immunomodulatory Agents from Plants*, H. Wagner (Editor), 1999  
*Cytokines and Pain*, L. Watkins, S. Maier (Editors), 1999  
*In Vivo Models of Inflammation*, D. Morgan, L. Marshall (Editors), 1999  
*Pain and Neurogenic Inflammation*, S.D. Brain, P. Moore (Editors), 1999  
*Anti-Inflammatory Drugs in Asthma*, A.P. Sampson, M.K. Church (Editors), 1999  
*Novel Inhibitors of Leukotrienes*, G. Folco, B. Samuelsson, R.C. Murphy (Editors), 1999  
*Vascular Adhesion Molecules and Inflammation*, J.D. Pearson (Editor), 1999  
*Metalloproteinases as Targets for Anti-Inflammatory Drugs*, K.M.K. Bottomley, D. Bradshaw, J.S. Nixon (Editors), 1999  
*Free Radicals and Inflammation*, P.G. Winyard, D.R. Blake, C.H. Evans (Editors), 1999  
*Gene Therapy in Inflammatory Diseases*, C.H. Evans, P. Robbins (Editors), 2000  
*New Cytokines as Potential Drugs*, S. K. Narula, R. Coffmann (Editors), 2000  
*High Throughput Screening for Novel Anti-inflammatories*, M. Kahn (Editor), 2000  
*Immunology and Drug Therapy of Atopic Skin Diseases*, C.A.F. Buijzeel-Komen, E.F. Knol (Editors), 2000  
*Novel Cytokine Inhibitors*, G.A. Higgs, B. Henderson (Editors), 2000  
*Inflammatory Processes. Molecular Mechanisms and Therapeutic Opportunities*, L.G. Letts, D.W. Morgan (Editors), 2000

- Cellular Mechanisms in Airways Inflammation*, C. Page, K. Banner, D. Spina (Editors), 2000  
*Inflammatory and Infectious Basis of Atherosclerosis*, J.L. Mehta (Editor), 2001  
*Muscarinic Receptors in Airways Diseases*, J. Zaagsma, H. Meurs, A.F. Roffel (Editors), 2001  
*TGF- $\beta$  and Related Cytokines in Inflammation*, S.N. Breit, S. Wahl (Editors), 2001  
*Nitric Oxide and Inflammation*, D. Salvemini, T.R. Billiar, Y. Vodovotz (Editors), 2001  
*Neuroinflammatory Mechanisms in Alzheimer's Disease. Basic and Clinical Research*, J. Rogers (Editor), 2001  
*Disease-modifying Therapy in Vasculitides*, C.G.M. Kallenberg, J.W. Cohen Tervaert (Editors), 2001  
*Inflammation and Stroke*, G.Z. Feuerstein (Editor), 2001  
*NMDA Antagonists as Potential Analgesic Drugs*, D.J.S. Sirinathsingji, R.G. Hill (Editors), 2002