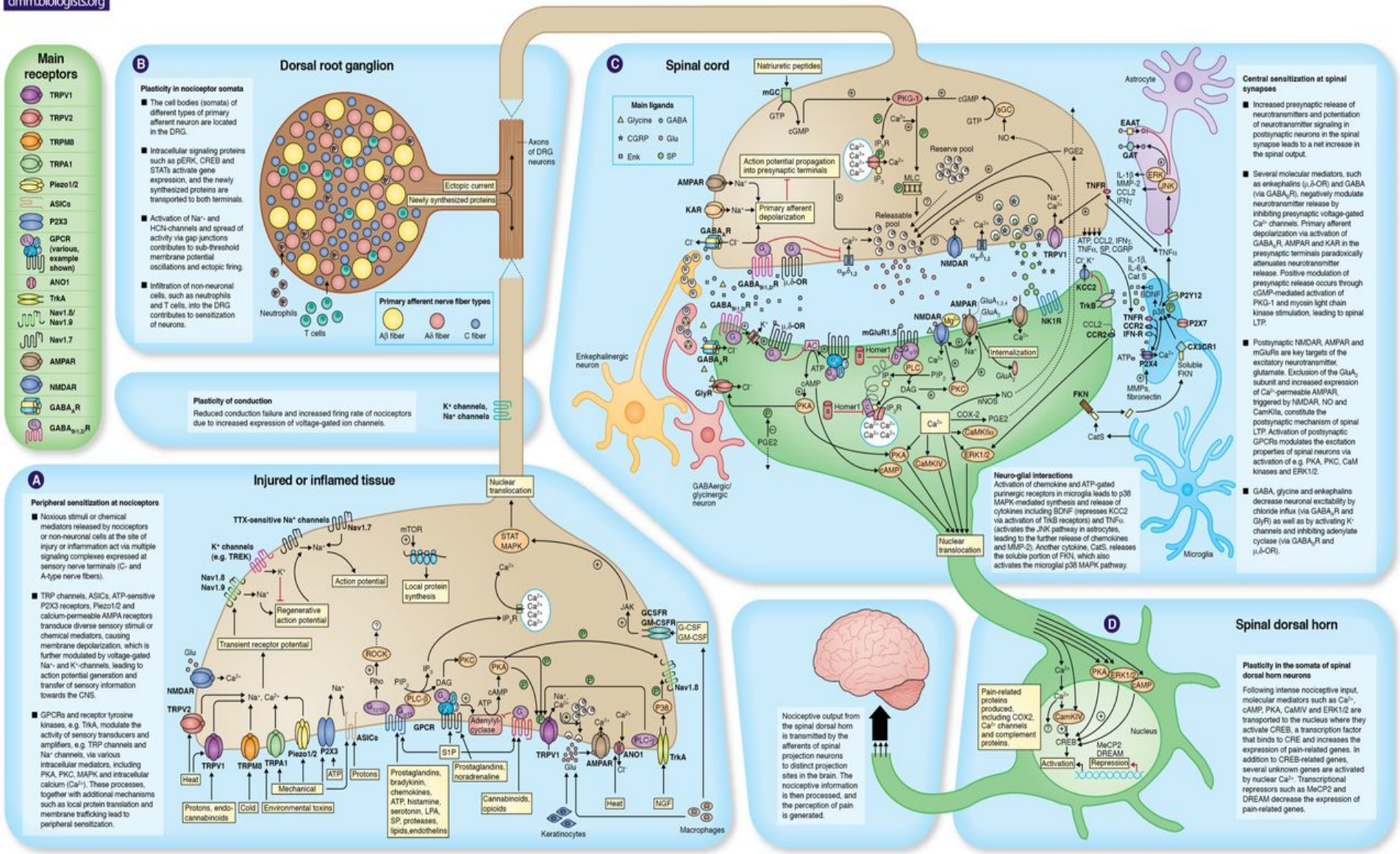
DMM Disease Models & Mechanisms
dmm.biologists.org

Pain hypersensitivity mechanisms at a glance

Vijayan Gangadharan and Rohini Kuner



Abbreviations: AC, adenylate cyclase; AMPAR, 2-amino-3-(3-hydroxy-5-methyl-isoxazol-4-yl)propanoic acid (AMPA) receptor; ANO1, anoctamin-1; ASICs, acid-sensing ion channels; BDNF, brain-derived neurotrophic factor; CaMKII, Ca2+/calmodulin-dependent protein kinases II; CatS, cathepsin S; CCL2, chemokine (C-C motif) ligand 2; CCR2, C-C chemokine receptor type 2; CGRP, calcitonin gene-related peptide; COX, cyclooxygenase; CREB, cAMP response element-binding protein; DAG, diacylglycerol; DREAM, DRE-antagonist modulator; DRG, dorsal root ganglion; EAAT, excitatory amino-acid transporter; Erk, enkephalin; ERK, extracellular signal-regulated kinase; FKN, fractalkine; GABA, γ-aminobutyric acid; GAT, GABA transporter; G-CSF, granulocyte colony-stimulating factor; GCSFR, G-CSF receptor; Glu, glutamic acid; GlyR, glycine receptor; GM-CSF, granulocyte macrophage colony-stimulating factor; GM-CSFR, GM-CSF receptor; GPCR, G-protein coupled receptor; HCN, hyperpolarization-activated cyclic nucleotide-gated; IFN-γR, interferon-γ receptor; IL, interleukin; IP_3, inositol trisphosphate; IP_3R, IP_3 receptor; JAK, Janus kinase; JNK, c-Jun N-terminal kinase; KAR, kainate receptor; KCC2, potassium chloride co-transporter 2; LPA, lysophosphatidic acid; LTP, long-term potentiation; MAPK, mitogen-activated protein kinase; MeCP2, methyl CpG binding protein 2; mGC, membrane guanylyl cyclase; mGluR, metabotropic glutamate receptors; MLC, myosin light chain phosphatase; MMPs, matrix metalloproteinases; mTOR, mammalian target of rapamycin; Nav, sodium channel protein; NGF, nerve growth factor; NKR1, neurokinin 1 receptor; NMDAR, N-methyl-D-aspartate receptor; nNOS, neuronal nitric oxide synthase; NO, nitric oxide; pERK, phosphorylated ERK; PGE2, prostaglandin E2; PIP_2, phosphatidylinositol (4,5)-bisphosphate; PKA, protein kinase A; PKC, protein kinase C; PKG-1, protein kinase G type 1; PLC, phospholipase C; ROCK, Rho-associated protein kinase; S1P, sphingosine-1-phosphate; sGC, soluble guanylyl cyclase; SP, substance P; STAT, signal transducer and activator of transcription; TNFα, tumor necrosis factor α; TNFR, TNF receptor; TREK, TWIK-related K+ channel; Trk, neurotrophic tyrosine kinase receptor; TRPA/M/V, transient receptor potential ankyrin/melastatin/vanilloid; TTX, tetrodotoxin.

© 2013. Published by The Company of Biologists Ltd.
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution and reproduction in any medium provided that the original work is properly attributed.