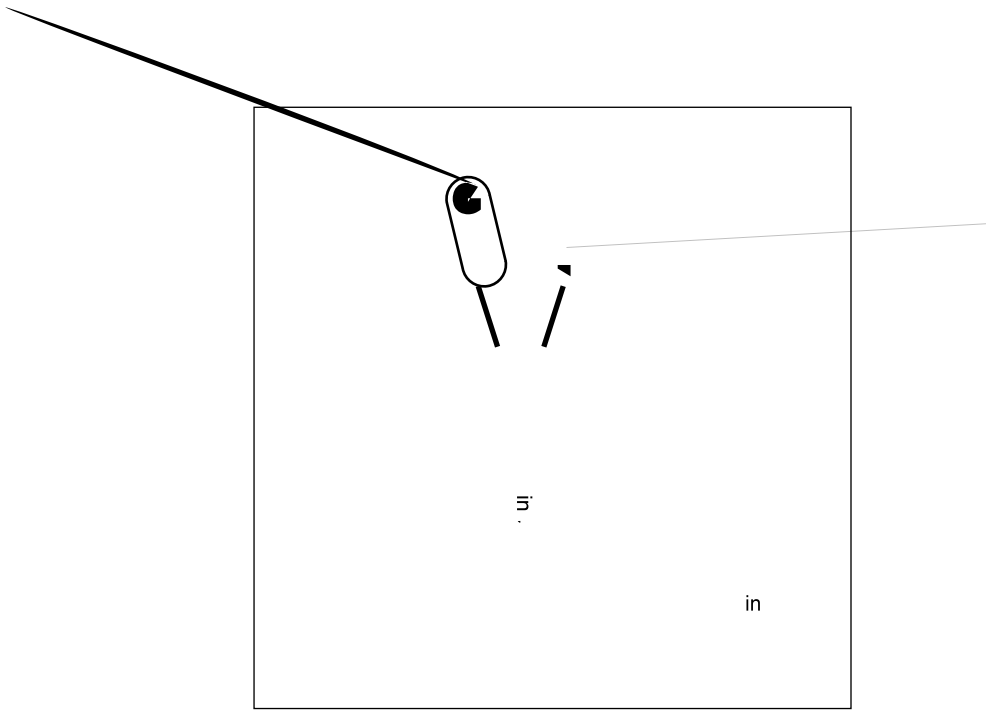
Signaling through the βγ subunits of G proteins to gate a potassium channel


in

Cell-signal control of function and localization of K_G channel

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Inwardly rectifying K^+ channels are hetero- or homo-tetramers of Kir subunits, which are now more than 20 members. The Kir subunits can be classified into four major subfamilies. Although Kir subunits possessing two putative membrane spanning regions and one pore-forming site are most primitive as ion channels, each Kir subfamily is responsible for respective important cellular function. Kir2.0 contributes to setting the resting membrane potentials, whereas Kir3.0 or Kir6.0 play pivotal roles in the control of cell excitability by G protein or by intracellular metabolic signalling, respectively. Kir1.1 and Kir4.0 are key molecules in transporting K^+ ions in epithelial cells and glial cells. In the presi6(lk,-20( )Ipan.)] T1.9

Calcium signalling in cerebellar Purkinje cells

Masamitsu Iino

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Purkinje cells (PC) provide sole output from the cerebellar cortex and receive two excitatory inputs: one from climbing fibers and the other from parallel fibers (PF).

Ion Channels and Fusion Pores in the Control of Neurosecretion

Meyer Jackson
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Special methods are required to bring the power of biophysical techniques to the study membrane function in nerve terminals. Three such techniques will be presented here. First, Ca^{2+} signaling in the nerve terminals of granule cell axons was studied by filling granule cell bodies with a Ca^{2+} sensitive fluorescence dye and using confocal microscopy to study action potential evoked changes in intracellular Ca^{2+}

Fusion pore dynmics studied with the two-photon excitation imaging.

Haruo Kasai, Noriko Takahashi, Ting-Ting Liu, Takuya Kishimoto, NIPS

The formation of a fusion pore plays a central role in the exocytosis of secretory vesicles.

Dendritic excitability and synaptic plasticity in the hippocampus

Nelson Spruston
Northwestern University
Dept. of Neurobiology & Physiology
Institute for Neuroscience

Modulation of Neuronal Ca^{2+} Channels by Protein Kinase A: Focusing on P/Q-type Channels

Toshihide Nukada[1],

RGS Proteins and Ion Channel Modulation

Stephen R. ,V[“• ‘i›-L·• ß#• rš Cš>Þß;¾§ö~us—ƒ€ö°Mšm!ƒöv…Kç—ËŠ}àí• ÕMÛ–””¥[A9I–føL,ô»Ëê;žˆŒM
exterior to the RGS domains appear to contribute unique roles which require further investigation.

Unexpected regulatory modes in calmodulin's embrace with Ca channels

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Johns Hopkins University School of Medicine

FUNCTIONAL EXPRESSION OF MULTIPLE CA^{2+} CHANNEL SUBTYPES IN CNS PRESYNAPTIC TERMINAL.

YE

Effects on synaptic transmission of calcium channel mutations

Keiji Imoto
Department of Information Physiology, National Institute for Physiological Sciences,

Roles of Phospholipase C

A critical role for Ca^{2+}

Ca