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Voltage-gated potassium channels (K_V) in GtoPdb v.2023.1

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Abstract

The 6TM family of K channels comprises the voltage-gated K_V subfamilies, the EAG subfamily (which includes hERG channels), the Ca^{2+}-activated Slo subfamily (actually with 7TM, termed BK) and the Ca^{2+}-activated SK subfamily. These channels possess a pore-forming α subunit that comprise tetramers of identical subunits (homomeric) or of different subunits (heteromeric). Heteromeric channels can only be formed within subfamilies (e.g. K_V1.1 with K_V1.2; K_V7.2 with K_V7.3). The pharmacology largely reflects the subunit composition of the functional channel.K_V7 channelsK_V7.1-K_V7.5 (KCNQ1-5) K^+ channels are voltage-gated K^+ channels with major roles in neurons, muscle cells and epithelia where they underlie physiologically important K^+ currents, such as the neuronal M-current and the cardiac IKs. Genetic deficiencies in all five KCNQ genes result in human excitability disorders, including epilepsy, autism spectrum disorders, cardiac arrhythmias and deafness. Thanks to the recent knowledge of the structure and function of human KCNQ-encoded proteins, these channels are increasingly used as drug targets for treating diseases [326, 2, 767].

Contents

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Database links

Voltage-gated potassium channels (K_V)

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