

Two-pore domain potassium channels (K_{2P}) in GtoPdb v.2025.4

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Abstract

The 4TM family of K channels mediate many of the background potassium currents observed in native cells. They are open across the physiological voltage-range and are regulated by a wide array of neurotransmitters and biochemical mediators. The pore-forming α -subunit contains two pore loop (P) domains and two subunits assemble to form one ion conduction pathway lined by four P domains. It is important to note that single channels do not have two pores but that each subunit has two P domains in its primary sequence; hence the name two-pore domain, or K_{2P} channels (and not two-pore channels). Some of the K_{2P} subunits can form heterodimers across subfamilies (*e.g.* K_{2P}3.1 with K_{2P}9.1). The nomenclature of 4TM K channels in the literature is still a mixture of IUPHAR and common names. The suggested division into subfamilies, described in the [more detailed introduction](#), is based on similarities in both structural and functional properties within subfamilies and this explains the "common abbreviation" nomenclature in the tables below.

Contents

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Database links

[Two-pore domain potassium channels \(K_{2P}\)](#)

<https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=79>

[Introduction to Two-pore domain potassium channels \(K_{2P}\)](#)

<https://www.guidetopharmacology.org/GRAC/FamilyIntroductionForward?familyId=79>

Channels and Subunits

[TWIK1\(K_{2P}1.1\)](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=513>
TREK1(K_{2p}2.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=514>
TASK1(K_{2p}3.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=515>
TRAAK1(K_{2p}4.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=516>
TASK2(K_{2p}5.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=517>
TWIK2(K_{2p}6.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=518>
K_{2p}7.1

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=519>
TASK3(K_{2p}9.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=520>
TREK2(K_{2p}10.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=521>
THIK2(K_{2p}12.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=522>
THIK1(K_{2p}13.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=523>
TASK5(K_{2p}15.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=524>
TALK1(K_{2p}16.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=525>
TALK2(K_{2p}17.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=526>
TRESK(K_{2p}18.1)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=527>

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