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KCNK4 (TRAAK) Polyclonal Antibody

Catalog # AP63688

Product Information

Application	IHC-P
Primary Accession	Q9NYG8
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	42704

Additional Information

Gene ID	50801
Other Names	KCNK4; TRAAK; Potassium channel subfamily K member 4; TWIK-related arachidonic acid-stimulated potassium channel protein; TRAAK; Two pore potassium channel KT4.1; Two pore K(+) channel KT4.1
Dilution	IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

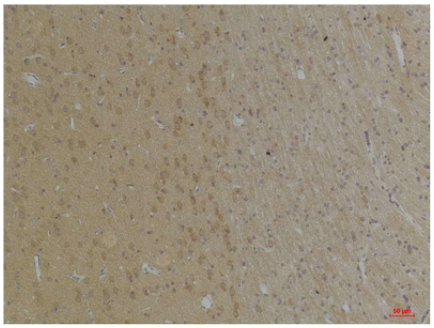
Name	KCNK4 {ECO:0000303|Ref.2, ECO:0000312|HGNC:HGNC:6279}
Function	K(+) channel that conducts voltage-dependent outward rectifying currents upon membrane depolarization. Voltage sensing is coupled to K(+) electrochemical gradient in an 'ion flux gating' mode where outward but not inward ion flow opens the gate. Converts to voltage-independent 'leak' conductance mode upon stimulation by various stimuli including mechanical membrane stretch, basic pH, heat and lipids (PubMed:22282805, PubMed:25471887, PubMed:25500157, PubMed:26919430, PubMed:30290154, PubMed:38605031). Homo- and heterodimerizes to form functional channels with distinct regulatory and gating properties (PubMed:26919430). At trigeminal A-beta afferent nerves, the heterodimer of KCNK2/TREK-1 and KCNK4/TRAAK is mostly coexpressed at nodes of Ranvier where it conducts voltage-independent mechanosensitive and thermosensitive currents, allowing rapid action potential repolarization, high speed and high frequence saltatory conduction on myelinated nerves to ensure prompt sensory responses (By similarity). Permeable to other monovalent cations such as Rb(+) and Cs(+) (PubMed:26919430).

Cellular Location	Cell membrane; Multi-pass membrane protein. Cell projection, axon {ECO:0000250|UniProtKB:G3V8V5}. Note=Localizes at the Ranvier nodes of myelinated afferent nerves {ECO:0000250|UniProtKB:G3V8V5}

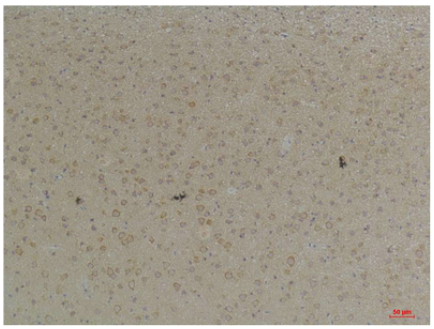
Background

Voltage-insensitive potassium channel (PubMed: 22282805). Channel opening is triggered by mechanical forces that deform the membrane (PubMed:22282805, PubMed:25471887, PubMed:25500157). Channel opening is triggered by raising the intracellular pH to basic levels (By similarity). The channel is inactive at 24 degrees Celsius (in vitro); raising the temperature to 37 degrees Celsius increases the frequency of channel opening, with a further increase in channel activity when the temperature is raised to 42 degrees Celsius (By similarity). Plays a role in the perception of pain caused by heat (By similarity). Plays a role in the sensory perception of pain caused by pressure (By similarity).

Images



Immunohistochemical analysis of paraffin-embedded Rat BrainTissue using KCNK4 (TRAAK) Rabbit pAb diluted at 1:200.



Immunohistochemical analysis of paraffin-embedded Mouse BrainTissue using KCNK4 (TRAAK) Rabbit pAb diluted at 1:200.