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Kv1.4 Rabbit pAb

Catalog # AP97915

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	P22459
Other Accession	P22459
Predicted	Rat, Pig, Human, Mouse, Rabbit, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	73257
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Kv1.4
Epitope Specificity	555-653/653
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the potassium channel family. A (Shaker) (TC 1.A.1.2) subfamily. Kv1.4/KCNA4 sub-subfamily.
SUBUNIT	Heterotetramer of potassium channel proteins. Binds PDZ domains of DLG1, DLG2 and DLG4. Interacts with SIGMAR1 (By similarity). Part of a complex containing KCNA1, KCNAB1 and LGI1 (By similarity).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Voltage-gated K+ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles, and other excitable cells. The KV gene family encodes more than 30 genes that comprise the subunits of the K+ channels, and they vary in their gating and permeation properties, subcellular distribution, and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming alpha-subunits (KV alpha), which include the KV1, KV2, KV3, and KV4 proteins, and accessory or KV beta subunits that modify the gating properties of the coexpressed KV alpha subunits. Differences exist in the patterns of trafficking, biosynthetic processing and surface expression of the major KV1 subunits (KV1.1, KV1.2, KV1.4, KV1.5 and KV1.6) expressed in rat and human brain, suggesting that the individual protein subunits are highly regulated to control for the assembly and formation of functional neuronal channels.

Additional Information

Gene ID	3739
Other Names	HBK4; HK1; HPCN2; HUKII; KCNA4L; KCNA8; KV1.4; MCIDDS; PCN2; KCHAN; Kv4; RHK1; RK3; KCNA4_HUMAN; KCNA4; Voltage-gated K(+) channel HuKII; Voltage-gated potassium channel HBK4; Voltage-gated potassium channel HK1; Voltage-gated potassium channel subunit Kv1.4; KCNA4_MOUSE; KCNA4_RAT; RCK4; potassium voltage-gated channel subfamily A member 4;

	potassium voltage-gated channel, shaker-related subfamily, member 4-like; potassium voltage-gated channel, shaker-related subfamily, member 4
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	KCNA4
Synonyms	KCNA4L
Function	Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes. Forms tetrameric potassium- selective channels through which potassium ions pass in accordance with their electrochemical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:19912772, PubMed:8495559). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCNA1, KCNA2, KCNA4, KCNA5, and possibly other family members as well; channel properties depend on the type of alpha subunits that are part of the channel (PubMed:8495559). Channel properties are modulated by cytoplasmic beta subunits that regulate the subcellular location of the alpha subunits and promote rapid inactivation. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes, making it difficult to assign currents observed in intact tissues to any particular potassium channel family member. Homotetrameric KCNA4 forms a potassium channel that opens in response to membrane depolarization, followed by rapid spontaneous channel closure (PubMed:19912772, PubMed:8495559). Likewise, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (PubMed:17156368).
Cellular Location	Cell membrane; Multi-pass membrane protein Cell projection, axon {ECO:0000250|UniProtKB:P15385}
Tissue Location	Expressed in brain, and at lower levels in the testis, lung, kidney, colon and heart (PubMed:27582084). Detected in heart ventricle.

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