Recombinant human Potassium voltage-gated channel subfamily D member 2

Catalog No: #AP72633

Package Size: #AP72633-1 20ug #AP72633-2 100ug #AP72633-3 1mg

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Description

Product Name	Recombinant human Potassium voltage-gated channel subfamily D member 2
Brief Description	Recombinant Protein
Host Species	Yeast
Purification	Greater than 90% as determined by SDS-PAGE.
Immunogen Description	Expression Region:406-630aaSequence Info:Cytoplasmic Domain
Other Names	Voltage-gated potassium channel subunit Kv4.2
Accession No.	Q9NZV8
Uniprot	Q9NZV8
GeneID	3751;
Calculated MW	27 kDa
Tag Info	N-terminal 6xHis-tagged
Target Sequence	VSNFSRIYHQNQRADKRRAQKKARLARIRAAKSGSANAYMQSKRNGLLSNQLQSSEDEQAFVSKSGSSFETQ HHHLLHCLEKTTNHEFVDEQVFEESCMEVATVNRPSSHSPSLSSQQGVTSTCCSRRHKKTFRIPNANVSGSH QGSIQELSTIQIRCVERTPLSNSRSSLNAKMEECVKLNCEQPYVTTAIISIPTPPVTTPEGDDRPESPEYSGGNI VRVSAL
Formulation	Tris-based buffer50% glycerol
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C,-80°C. The shelf life of lyophilized form is 12 months at -20°C,-80°C.Notes:Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Background

Voltage-gated potassium channel that mediates transmbrane potassium transport in excitable mbranes, primarily in the brain. Mediates the major part of the dendritic A-type current I(SA) in brain neurons . This current is activated at mbrane potentials that are below the threshold for action potentials. It regulates neuronal excitability, prolongs the latency before the first spike in a series of action potentials, regulates the frequency of repetitive action potential firing, shortens the duration of action potentials and regulates the back-propagation of action potentials from the neuronal cell body to the dendrites. Contributes to the regulation of the circadian rhytm of action potential firing in suprachiasmatic nucleus neurons, which regulates the circadian rhythm of locomotor activity . Functions downstream of the metabotropic glutamate receptor GRM5 and plays a role in neuronal excitability and in nociception mediated by activation of GRM5 . Mediates the transient outward current I(to) in rodent heart left ventricle apex cells, but not in human heart, where this current is mediated by another family mber. Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochical gradient . The channel alternates between opened and closed conformations in response to the voltage difference across the mbrane . Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCND2 and KCND3; channel properties depend on the type of pore-forming alpha subunits that are part of the channel. In vivo, mbranes probably contain a mixture of heteromeric potassium channel complexes. Interaction with specific isoforms of the regulatory subunits KCNIP1, KCNIP2, KCNIP3 or KCNIP4 strongly increases expression at the cell surface and thereby increases channel activity; it modulates the kinetics of channel activation and inactivation, shifts the threshold for channel activation to more negative voltage values, shifts the threshold for inactivation to less negative voltages and accelerates recovery after inactivation . Likewise, interaction with DPP6 or DPP10 promotes expression at the cell mbrane and

regulates both channel characteristics and activity .

References

The DNA sequence of human chromosome 7.Hillier L.W., Fulton R.S., Fulton L.A., Graves T.A., Pepin K.H., Wagner-McPherson C., Layman D., Maas J., Jaeger S., Walker R., Wylie K., Sekhon M., Becker M.C., O'Laughlin M.D., Schaller M.E., Fewell G.A., Delehaunty K.D., Miner T.L. , Nash W.E., Cordes M., Du H., Sun H., Edwards J., Bradshaw-Cordum H., Ali J., Andrews S., Isak A., Vanbrunt A., Nguyen C., Du F., Lamar B., Courtney L., Kalicki J., Ozersky P., Bielicki L., Scott K., Holmes A., Harkins R., Harris A., Strong C.M., Hou S., Tomlinson C., Dauphin-Kohlberg S., Kozlowicz-Reilly A., Leonard S., Rohlfing T., Rock S.M., Tin-Wollam A.-M., Abbott A., Minx P., Maupin R., Strowmatt C., Latreille P., Miller N., Johnson D., Murray J., Woessner J.P., Wendl M.C., Yang S.-P., Schultz B.R., Wallis J.W., Spieth J., Bieri T.A., Nelson J.O., Berkowicz N., Wohldmann P.E., Cook L.L., Hickenbotham M.T., Eldred J., Williams D., Bedell J.A., Mardis E.R., Clifton S.W., Chissoe S.L., Marra M.A., Raymond C., Haugen E., Gillett W., Zhou Y., James R., Phelps K., Iadanoto S., Bubb K., Simms E., Levy R., Clendenning J., Kaul R., Kent W.J., Furey T.S., Baertsch R.A., Brent M.R., Keibler E., Flicek P., Bork P., Suyama M., Bailey J.A., Portnoy M.E., Torrents D., Chinwalla A.T., Gish W.R., Eddy S.R., McPherson J.D., Olson M.V., Eichler E.E., Green E.D., Waterston R.H., Wilson R.K.Nature 424:157-164(2003)Research Topic:Transport

Note: This product is for in vitro research use only