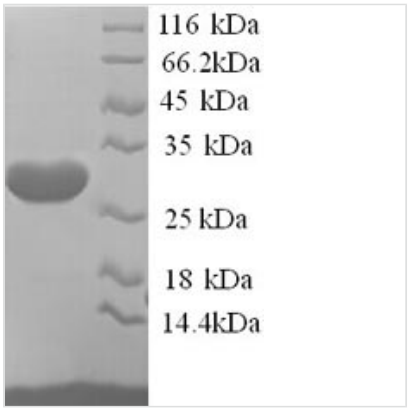
Recombinant Human Potassium voltage-gated channel subfamily D member 2 (KCND2), partial

Product Code	CSB-YP012023HU
Relevance	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 .
Abbreviation	Recombinant Human KCND2 protein, partial
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.
Uniprot No.	Q9NZV8
Alias	Voltage-gated potassium channel subunit Kv4.2
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)

Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	VSNFSRIYHQNQRADKRRAQKKARLARIRAAKSGSANAYMQSKRNGLLSNQL QSSEDEQAFVSKSGSSFETQHHHLLHCLEKTTNHEFVDEQVFEESCMEVATV NRPSSHSPSLSSQQGVTSTCCSRRHKKTFRIPNANVSGSHQGSIQELSTIQIR CVERTPLSNSRSSLNAKMEECVKLNCEQPYVTTAIISIPTPPVTTPEGDDRPES PEYSGGNIVRVSAL
Research Area	Transport
Source	Yeast
Target Names	KCND2
Expression Region	406-630aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	27.0kDa
Protein Length	Cytoplasmic Domain
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	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.