

Recombinant Human KCNKG Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50592

Size: 10ug, 100ug

Protein Name: Potassium channel subfamily K member 16 (2P domain potassium channel Talk-1) (TWIK-related alkaline pH-activated K(+) channel 1) (TALK-1)

Synonym: KCNK16, TALK1

UniProt ID: Q96T55

UniProt Link: www.uniprot.org/uniprotkb/Q96T55/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 309 AA

Molecular Weight: 34 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPSAGLCSCWGGRLVPLLLAYVCYLLLGATIFQLLERQAEAQSRDQFQLEKLRFLNRYTCLDQWAM
EQFVQVIMEAWVKGVNPKGNSTNPSNWDGSSFFFAAGTVVTTIGYGNLAPSTEAGQVFCVYALLGI
PLNVIFLNHLGTGLRAHLAAIERWEDRPRRSQVLQVLGLALFLTGLTLVILIFPPMVFSHVEGWSFSEG
FYFAFITLSTIGFGDYVVGTDPSKHYSVYRSLAAIWILLGLAWLALILPLGPLLLHRCCQLWLLSLRQG
CGAKAAPGRRPRRGSTAARGVQVTPQDFPISKKGLGS

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Potassium channel subfamily K member 16 (2P domain potassium channel Talk-1) (TWIK-related alkaline pH-activated K(+) channel 1) (TALK-1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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 (PubMed:11263999, PubMed:12724142, PubMed:14985088, PubMed:26919430, PubMed:28928238, PubMed:34032641, PubMed:36063992). Homo- and heterodimerizes to form functional channels with distinct regulatory and gating properties (PubMed:36063992). In pancreatic islets, conducts K(+) countercurrents for Ca(2+) release from the endoplasmic reticulum (ER) and regulates the frequency and duration of cytosolic Ca(2+) oscillations coupled to secretion of pancreatic hormones (PubMed:26239056, PubMed:28928238, PubMed:29402588, PubMed:34032641). In pancreatic beta cells, drives ER Ca(2+) efflux, which in turn activates Ca(2+)-dependent plasma membrane K(+) slow currents and cytosolic Ca(2+) influx, overall contributing to synchronous cytosolic Ca(2+) oscillations. Limits glucose-induced cytosolic Ca(2+) oscillations coupled to second-phase INS secretion (PubMed:26239056, PubMed:28928238, PubMed:34032641). Contributes to beta cell adaptation to acute inflammation by maintaining normal cytosolic Ca(2+) levels and INS secretion (By similarity). May regulate beta cell mitochondrial Ca(2+) levels either indirectly via ER Ca(2+) efflux or directly by hyperpolarizing the mitochondrial membrane potential. Limits mitochondrial Ca(2+) oscillations and ATP production involved in glucose homeostasis upon metabolic stress (By similarity). In pancreatic delta cells, limits Ca(2+)-induced Ca(2+)-release involved in somatostatin secretion and modulates islet paracrine signaling involved in glucagon secretion (PubMed:29402588). Permeable to other monovalent cations such as Rb(+) and Cs(+) (By similarity) (PubMed:26919430).

Subcellular Localization: [Isoform a]: Endoplasmic reticulum membrane ; Multi-pass membrane protein . Cell membrane ; Multi-pass membrane protein .; [Isoform b]: Endoplasmic reticulum membrane ; Multi-pass membrane protein . Mitochondrion inner membrane ; Multi-pass membrane protein .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.