

Recombinant Human PKP3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50792

Size: 10ug, 100ug

Protein Name: Plakophilin-3

Synonym: PKP3

UniProt ID: Q9Y446

UniProt Link: www.uniprot.org/uniprotkb/Q9Y446/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 797 AA

Molecular Weight: 87 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MQDGNFLLSALQPEAGVCSLALPSDLQLDRRGAEGPEAERLRAARVQEQVRARLLQLGQQPRHNG
AAEPEPEAETARGTSRGQYHTLQAGFSSRSQGLSGDKTSGFRPIAKPAYSPASWSSRSAYDLSCSR
RLSSAHNGGSAFGAAGYGGAQPTPPMPTRPVSFHERGGVGSRADYDTLSLRSRLRGPGLDDRYSD
LVSEQLEPAATSTYRAFAYERQASSSSSRAGGLDWPEATEVSPSRTIRAPAVRTLQRFQSSHRSRG
VGGAVPGAVLEPVARAPSVRSLSLSLADSGHLDPDVHGFNSYGSHTLQRLSSGFDDIDLPSAVKYL
MASDPNLQVLGAAYIQHKCYSDAAAKKQARSLQAVPRLVKLFNHANQEVQRHATGAMRNLIYDNAD
NKLALVEENGIFELLRTLREQDDELKKNVTGILWNLSSSDHLKDRLARDTLEQLTDLVLSPLSGAGGP
PLIQQNASEAEIFYNATGFLRNLSASQATRQKMRECHGLVDALVTSINHALDAGKCEDKSVENAVC
VLRNLSYRLYDEMPPSALQRLEGRGRRLDLAGAPPGEVVGCFTPQSRRLRELPLAADALTFAEVSKD
PKGLEWLWSPQIVGLYNRLQRCELNRHTTEAAAGALQNITAGDRRWAGVLSRLALEQERILNPLLD
RVRTADHHQLRSLTGLIRNLSRNARNKDEMSTKVVSHLIEKLPGSVGEKSPPAEVLVNIIAVLNNLVV
ASPIAARDLLYFDGLRKLIFIKKKRDSPDSEKSSRAASSLLANLWQYNKLHRDFRAKGYRKEDFLGP

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 Plakophilin-3 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: A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:24124604). Required for the localization of DSG2, DSP and PKP2 to mature desmosome junctions (PubMed:20859650). May also play a role in the maintenance of DSG3 protein abundance in keratinocytes (By similarity). Required for the formation of DSP-containing desmosome precursors in the cytoplasm during desmosome assembly (PubMed:25208567). Also regulates the accumulation of CDH1 to mature desmosome junctions, via cAMP-dependent signaling and its interaction with activated RAP1A (PubMed:25208567). Positively regulates the stabilization of PKP2 mRNA and therefore protein abundance, via its interaction with FXR1, may also regulate the protein abundance of DSP via the same mechanism (PubMed:25225333). May also regulate the protein abundance of the desmosome component PKP1 (By similarity). Required for the organization of desmosome junctions at intercellular borders between basal keratinocytes of the epidermis, as a result plays a role in maintenance of the dermal barrier and regulation of the dermal inflammatory response (By similarity). Required during epidermal keratinocyte differentiation for cell adherence at tricellular cell-cell contacts, via regulation of the timely formation of adherens junctions and desmosomes in a calcium-dependent manner, and may also play a role in the organization of the intracellular actin fiber belt (By similarity). Acts as a negative regulator of the inflammatory response in hematopoietic cells of the skin and intestine, via modulation of proinflammatory cytokine production (By similarity). Important for epithelial barrier maintenance in the intestine to reduce intestinal permeability, thereby plays a role in protection from intestinal-derived endotoxemia (By similarity). Required for the development of hair follicles, via a role in the regulation of inner root sheaf length, correct alignment and anterior-posterior polarity of hair follicles (By similarity). Promotes proliferation and cell-cycle G1/S phase transition of keratinocytes (By similarity). Promotes E2F1-driven transcription of G1/S phase promoting genes by acting to release E2F1 from its inhibitory interaction with RB1, via sequestering RB1 and CDKN1A to the cytoplasm and thereby increasing CDK4- and CDK6-driven phosphorylation of RB1 (By similarity). May act as a scaffold protein to facilitate MAPK phosphorylation of RPS6KA protein family members and subsequently promote downstream EGFR signaling (By similarity). May play a role in the positive regulation of transcription of Wnt-mediated TCF-responsive target genes (PubMed:34058472).

Subcellular Localization: Nucleus . Cell junction, desmosome . Cytoplasm . Cell membrane ; Peripheral membrane protein . Cell junction, adherens junction . Note=Translocates to the nucleus following canonical WNT signaling activation by WNT3A (PubMed:34058472). Maintains a cytoplasmic pool which can then be translocated to the desmosome, the cytoplasmic pool is maintained through PKP3 interaction with SFN (PubMed:24124604). Aberrant increases in translocation to the desmosome result in cell junction instability and therefore decreased cell adhesion (PubMed:24124604). Partially colocalizes at cell junctions in a zipper-like pattern with DSP, CDH1, CTNNB1 and CTNND1 in the early stages of keratinocyte differentiation (By similarity). Moves to cell junctions at tricellular contacts as differentiation progresses and as epithelial sheet formation completes (By similarity).; [Isoform PKP3a]: Cell junction, desmosome . Cytoplasm .; [Isoform PKP3b]: Cell junction, desmosome . Cytoplasm .

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.