

Recombinant Human PLK3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50801

Size: 10ug, 100ug

Protein Name: Serine/threonine-protein kinase PLK3 (EC 2.7.11.21) (Cytokine-inducible serine/threonine-protein kinase) (FGF-inducible kinase) (Polo-like kinase 3) (PLK-3) (Proliferation-related kinase)

Synonym: PLK3, CNK, FNK, PRK

UniProt ID: Q9H4B4

UniProt Link: www.uniprot.org/uniprotkb/Q9H4B4/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 646 AA

Molecular Weight: 72 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEPAAGFLSPRPFQRAAAAPAPPAGPGPPPSALRGPELEMLAGLPTSDPGRLITDPRSGRITYLKGR
LLGKGGFARCYEATDTETGSAYAVKVIPQSRVAKPHQREKILNEIELHRDLQHRHIVRFSHHFEDADN
IYIFLELC SRKSLAHIWKARHTLLEPEVRYYL RQILSGLKYLHQRGILHRDLKLG NFFITENMELKVGDF
GLAARLEPPEQRKKTICGTPNYVAPEVLLRQGHGPEADVWSLGCVMYTLLCGSPPFETADLKETYR
CIKQVHYTL PASLSL PARQLLAAILRASPRDRPSIDQILRHDFFTKGYTPDRLPISSCVTPDLTPPNPA
RSLFAKVTKSLFGRKKKSKNHAQERDEVSGLVSGLMRTSVGHQDARPEAPAASGPAPVSLVETAPE
DSSPRGTLASSGDGFEEGLTVATVVESALCALRN CIAFMPPAEQNPAPLAQPEPLVWVSKWVDYSN
KFGFGYQLSSRRVAVLFNDGTHMAL SANRKT VHYNPTSTKHFSFSVGAVPRALQPQLGILRYFASY
MEQHLMKGGDLPSVEEVEVPAPLLLQWVKTDQALLMLFSDGTVQVNFYGDHTKLILSGWEPLLVT
FVARNRSACTYLASHLRQLGCSPDLRQRLRYALRLLRDRSPA

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 Serine/threonine-protein kinase PLK3 (EC 2.7.11.21) (Cytokine-inducible serine/threonine-protein kinase) (FGF-inducible kinase) (Polo-like kinase 3) (PLK-3) (Proliferation-related kinase) 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: Serine/threonine-protein kinase involved in cell cycle regulation, response to stress and Golgi disassembly. Polo-like kinases act by binding and phosphorylating proteins that are already phosphorylated on a specific motif recognized by the POLO box domains. Phosphorylates ATF2, BCL2L1, CDC25A, CDC25C, CHEK2, HIF1A, JUN, p53/TP53, p73/TP73, PTEN, TOP2A and VRK1. Involved in cell cycle regulation: required for entry into S phase and cytokinesis. Phosphorylates BCL2L1, leading to regulate the G2 checkpoint and progression to cytokinesis during mitosis. Plays a key role in response to stress: rapidly activated upon stress stimulation, such as ionizing radiation, reactive oxygen species (ROS), hyperosmotic stress, UV irradiation and hypoxia. Involved in DNA damage response and G1/S transition checkpoint by phosphorylating CDC25A, p53/TP53 and p73/TP73. Phosphorylates p53/TP53 in response to reactive oxygen species (ROS), thereby promoting p53/TP53-mediated apoptosis. Phosphorylates CHEK2 in response to DNA damage, promoting the G2/M transition checkpoint. Phosphorylates the transcription factor p73/TP73 in response to DNA damage, leading to inhibit p73/TP73-mediated transcriptional activation and pro-apoptotic functions. Phosphorylates HIF1A and JUN in response to hypoxia. Phosphorylates ATF2 following hyperosmotic stress in corneal epithelium. Also involved in Golgi disassembly during the cell cycle: part of a MEK1/MAP2K1-dependent pathway that induces Golgi fragmentation during mitosis by mediating phosphorylation of VRK1. May participate in endomitotic cell cycle, a form of mitosis in which both karyokinesis and cytokinesis are interrupted and is a hallmark of megakaryocyte differentiation, via its interaction with CIB1.

Subcellular Localization: Cytoplasm. Nucleus. Nucleus, nucleolus. Golgi apparatus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Translocates to the nucleus upon cisplatin treatment. Localizes to the Golgi apparatus during interphase. According to a report, PLK3 localizes only in the nucleolus and not in the centrosome, or in any other location in the cytoplasm (PubMed:17264206). The discrepancies in results may be explained by the PLK3 antibody specificity, by cell line-specific expression or post-translational modifications.

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.