Recombinant PLK2 protein (His tag)

Catalog Number	548394
Synonyms	Polo-like kinase 2; PLK-2; hPlk2; Serine/threonine-protein kinase SNK; hSNK; Serum-inducible kinase
Species	Human
Expression System	E. coli
Accession	Q9NYY3
Molecular Weight	Predictes a molecular mass of 29.09 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 29 kDa band.

Product Information

Sequence Region	446-685
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>89%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 446-685 aa (Q9NYY3) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Serine/threonine-protein kinase PLK2 (EC 2.7.11.21) Fragment (residues 446-685) is a high-purity protein designed for studying the POLO box domains. This fragment, encompassing POLO box 1 and POLO box 2, serves as an essential tool for investigating PLK2's roles in synaptic plasticity, centriole duplication, and cell cycle regulation, offering researchers a targeted approach to dissect domain-specific functions. Serine/threonine-protein kinase PLK2 is a tumor suppressor kinase critical for synaptic plasticity, centriole duplication, and G1/S phase transition. It functions by binding and phosphorylating proteins that are pre-phosphorylated on specific motifs recognized by its POLO box domains. Key substrates include CPAP, NPM1, RAPGEF2, RASGRF1, SNCA, SIPA1L1, and SYNGAP1. In synaptic plasticity, PLK2 regulates Ras and Rap signaling pathways by phosphorylating activators and inhibitors, such as RASGRF1 and SIPA1L1, leading to their proteasomal degradation, and it also modulates AMPAR-mediated currents through NSF interaction. Additionally, PLK2 is essential for procentriole formation and centriole duplication via phosphorylation of CPAP and NPM1, and its induction by p53/TP53 suggests involvement in the mitotic checkpoint. Subcellularly, PLK2 localizes to the cytoplasm, cytoskeleton, microtubule organizing center, centrosome, and centriole, with specific distribution to the mother centriole in early G1 phase and equal distribution to both centrioles at S phase onset, and it is also present in dendrites.