Recombinant VRK3 protein (His tag)

Catalog Number	547676
Synonyms	Vaccinia-related kinase 3
Species	Human
Expression System	E. coli
Accession	Q8IV63
Molecular Weight	Predictes a molecular mass of 39.45 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 39 kDa band.

Product Information

Sequence Region	141-474
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, 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 141-474 aa (Q8IV63) 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 VRK3 (EC 2.7.11.22) fragment (residues 141-474) is a high-purity protein designed for studying kinase activity and domain-specific functions. This fragment fully encompasses the catalytic protein kinase domain, making it an ideal tool for investigating cell cycle regulation, ERK signaling modulation, and nuclear envelope dynamics in research applications. Serine/threonine-protein kinase VRK3 is a crucial regulator of cell cycle progression and ERK signaling pathways. The full-length protein phosphorylates barrier-to-autointegration factor (BAF), facilitating nuclear envelope disassembly and reassembly during mitosis. Additionally, VRK3 collaborates with VHR/DUSP3 phosphatase to negatively regulate ERK activity in the nucleus, ensuring transient ERK signaling under normal conditions. Under stress, CDK5-mediated phosphorylation enhances VRK3's role in suppressing prolonged ERK activation to prevent cell death. VRK3 is primarily localized in the nucleus but translocates to the cytoplasm under oxidative stress, highlighting its dynamic cellular distribution and adaptive function in stress responses.