Recombinant VRK2 protein (His tag)

Catalog Number	540657
Synonyms	Vaccinia-related kinase 2
Species	Human
Expression System	E. coli
Accession	Q86Y07
Molecular Weight	Predictes a molecular mass of 38.91 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 39 kDa band.

Product Information

Sequence Region	1-327
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, 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 1-327 aa (Q86Y07) 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 VRK2 (EC 2.7.11.1) fragment (amino acids 1-327) is a high-purity protein designed to encompass the complete protein kinase domain. This product serves as an essential tool for investigating kinase activity, substrate interactions, and signal transduction mechanisms in cellular pathways. Serine/threonine-protein kinase VRK2 is a human enzyme that regulates multiple signal transduction pathways, including responses to hypoxia and cytokines like interleukin-1 beta. It modulates stress responses by interacting with MAPK8IP1 to assemble mitogen-activated protein kinase (MAPK) complexes, thereby reducing JNK phosphorylation and JUN-dependent transcription. VRK2 phosphorylates key substrates such as p53/TP53 at Thr-18, histone H3, and BANF1, disrupting BANF1's DNA-binding capacity and its interaction with LEM domain-containing proteins. Additionally, it downregulates ERBB2-, HRAS-, BRAF-, and MEK1-induced transcription and blocks ERK phosphorylation in response to ERBB2 and HRAS. Isoform 1 localizes to the cytoplasm, endoplasmic reticulum membrane, mitochondrial membrane, and nuclear envelope as a single-pass type IV membrane protein, while isoform 2 is found in the cytoplasm and nucleus. This recombinant fragment, covering the protein kinase domain (amino acids 29-319), enables focused studies on VRK2's catalytic functions and regulatory roles.