Recombinant ACK1 protein (His tag)

Catalog Number	544860
Synonyms	ACK-1; Tyrosine kinase non-receptor protein 2
Species	Human
Expression System	E. coli
Accession	Q07912
Molecular Weight	Predictes a molecular mass of 39.06 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 41 kDa band.

Product Information

Sequence Region	119-444
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, 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 119-444 aa (Q07912) 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 Activated CDC42 Kinase 1 (ACK-1) Fragment (aa 119-444) is a high-purity, functional protein encompassing the complete protein kinase domain. This fragment, derived from human TNK2, serves as an essential tool for investigating kinase activity, signal transduction mechanisms, and cellular processes such as migration, survival, and proliferation in a controlled experimental setting. ACK-1, encoded by the TNK2 gene in Homo sapiens, is a non-receptor tyrosine-protein and serine/threonine-protein kinase integral to cell spreading, migration, survival, growth, and proliferation. It transduces extracellular signals to cytosolic and nuclear effectors, phosphorylating key targets including AKT1, AR, MCF2, WASL, and WWOX. ACK-1 is implicated in clathrin-mediated endocytosis and trafficking, notably binding to EGFR and clathrin to regulate EGFR degradation and accumulation in early endosomes. As a downstream effector of CDC42, it mediates cell migration via BCAR1 phosphorylation and contributes to synaptic function, brain development, and cancer progression by modulating tumor suppressors and pro-survival factors. Subcellularly, ACK-1 localizes to the cell membrane, nucleus, endosomes, adherens junctions, clathrin-coated vesicles and pits, and perinuclear regions, with nuclear translocation being CDC42-dependent, highlighting its dynamic role in diverse cellular compartments.