Recombinant TSC1 protein (His tag)

Catalog Number	547855
Synonyms	Tuberous sclerosis 1 protein
Species	Human
Expression System	E. coli
Accession	Q92574
Molecular Weight	Predictes a molecular mass of 36.42 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 39 kDa band.

Product Information

Sequence Region	689-978
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>86%, 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 689-978 aa (Q92574) 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	Introducing the recombinant Human Hamartin (Tuberous sclerosis 1 protein) fragment (residues 689-978), a stable and soluble protein unit designed for structural and biochemical studies. This fragment, derived from the TSC1 gene, supports research into mTORC1 signaling regulation and tumor suppressor mechanisms, offering a reliable tool for in vitro analysis. Hamartin, encoded by the TSC1 gene, is a critical non-catalytic component of the TSC-TBC complex, which negatively regulates the mTORC1 pathway to control cellular growth and nutrient sensing. By acting as a GTPase-activating protein for RHEB, it inhibits mTORC1 activity under nutrient-deficient conditions, preventing phosphorylation of targets like RPS6KB1 and EIF4EBP1. Additionally, Hamartin stabilizes TSC2, prevents its aggregation, and functions as a co-chaperone for HSP90AA1, enhancing the chaperoning of client proteins such as kinases and the glucocorticoid receptor. It localizes to lysosomal membranes and the cytosol, with dynamic shuttling in response to nutrient availability, and serves as a tumor suppressor implicated in tuberous sclerosis and related pathways.