Recombinant TSC2 protein (His tag)

Catalog Number	542370
Synonyms	Tuberous sclerosis 2 protein
Species	Human
Expression System	E. coli
Accession	P49815
Molecular Weight	Predictes a molecular mass of 31.76 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 32 kDa band.

Product Information

Sequence Region	1495-1757
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 1495-1757 aa (P49815) 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 Tuberin (TSC2) fragment (residues 1495-1757), a high-quality human protein product designed for structural and biochemical studies. This 263-amino acid fragment is engineered to provide a stable and soluble unit, ideal for investigating the molecular mechanisms of mTORC1 regulation and cellular growth pathways. Tuberin, encoded by the TSC2 gene, serves as the catalytic component of the TSC-TBC complex, a key negative regulator of the mTORC1 signaling pathway. This complex acts as a central nutrient sensor, inhibiting mTORC1 under nutrient-deprived conditions to prevent phosphorylation of downstream targets like RPS6KB1 and EIF4EBP1, thereby controlling cellular anabolism and growth. Tuberin functions as a GTPase-activating protein (GAP) for RHEB, directly modulating mTORC1 activity. It is primarily localized to lysosomal membranes, where it dissociates in response to insulin signaling and AKT1 phosphorylation, relocating to the cytosol. Dysregulation of Tuberin is linked to tuberous sclerosis complex, underscoring its importance in cellular homeostasis and disease research.