Recombinant GRB10 protein (His tag)

Catalog Number	547258
Synonyms	GRB10 adapter protein; Insulin receptor-binding protein Grb-IR
Species	Human
Expression System	E. coli
Accession	Q13322
Molecular Weight	Predictes a molecular mass of 50.97 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 51 kDa band.

Product Information

Sequence Region	166-594
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>89%, 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 166-594 aa (Q13322) 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 GRB10 Adapter Protein Fragment (aa 166-594) is a high-purity, functionally active protein designed for studying key signaling pathways. This fragment encompasses the Ras-associating, PH, and SH2 domains, making it an essential tool for investigating receptor tyrosine kinase modulation, insulin/IGF signaling regulation, and Wnt pathway interactions in cellular research. Growth factor receptor-bound protein 10 (GRB10) functions as a critical adapter protein that modulates coupling between cell surface receptor kinases and specific signaling pathways. It binds to and suppresses signals from activated receptor tyrosine kinases, including insulin (INSR) and insulin-like growth factor (IGF1R) receptors, through two primary mechanisms: interference with signaling pathways and enhanced receptor degradation. GRB10 delays AKT1 phosphorylation in response to insulin, blocks INSR-IRS1/2 associations, and recruits NEDD4 to promote IGF1R ubiquitination and degradation. Additionally, it negatively regulates Wnt signaling by interacting with LRP6 and positively regulates KDR/VEGFR-2 signaling by potentially inhibiting NEDD4-mediated degradation. Located primarily in the cytoplasm, GRB10 follows IGF1R internalization to early endosomes, dissociating before lysosomal sorting, highlighting its dynamic role in cellular signaling and receptor trafficking.