Recombinant RD3 protein (His tag)

Catalog Number	545299
Synonyms	Retinal degeneration protein 3
Species	Human
Expression System	E. coli
Accession	Q7Z3Z2
Molecular Weight	Predictes a molecular mass of 18.72 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 20 kDa band.

Product Information

Sequence Region	1-145
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, 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 1-145 aa (Q7Z3Z2) 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 Protein RD3 (Retinal Degeneration Protein 3) Fragment (1-145) is a high-purity, stable protein designed for structural and biochemical studies. This fragment represents a soluble unit of RD3, which plays a critical role in regulating nucleotide cycles in photoreceptors and is essential for retinal cell survival. Ideal for investigating photoreceptor function and related diseases. Protein RD3, encoded by the RD3 gene in Homo sapiens, is a key regulator of enzymes involved in the nucleotide cycle within photoreceptors. It inhibits the basal and GCAP-stimulated activities of retinal guanylyl cyclases GUCY2D and GUCY2F, which are responsible for cGMP production, and facilitates their transport to photoreceptor outer segments. Additionally, RD3 up-regulates GUK1 kinase activity, supporting GMP and cGMP recycling, and is vital for the survival of rod and cone cells in the retina. Subcellularly, RD3 localizes to the photoreceptor outer segment, inner segment, endosome, nucleus, cytoplasm, and perinuclear region, often colocalizing with GUCY2E, GUCY2F, and GUK1. This fragment (residues 1-145) was selected for its stability and solubility, enabling detailed mechanistic and structural analyses.