Recombinant ITPR1 protein (His tag)

Catalog Number	542683
Synonyms	IP3 receptor isoform 1; IP3R 1; InsP3R1; Inositol 1,4,5 trisphosphate receptor; Inositol 1,4,5-trisphosphate receptor type 1; Type 1 inositol 1,4,5-trisphosphate receptor; Type 1 InsP3 receptor
Species	Human
Expression System	E. coli
Accession	Q14643
Molecular Weight	Predictes a molecular mass of 37.55 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 38 kDa band.

Product Information

Sequence Region	1-320
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 1-320 aa (Q14643) 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 Inositol 1,4,5-trisphosphate-gated calcium channel ITPR1 fragment (amino acids 1-320), a meticulously engineered protein tool encompassing the complete MIR 1, MIR 2, and MIR 3 domains. This fragment is ideal for investigating the structural and functional roles of these critical domains in calcium signaling and endoplasmic reticulum-mediated cellular processes. The full-length ITPR1 protein is an inositol 1,4,5-trisphosphate-gated calcium channel located primarily in the endoplasmic reticulum membrane. Upon binding inositol 1,4,5-trisphosphate, it mediates calcium release from the endoplasmic reticulum, playing a pivotal role in intracellular calcium signaling. This protein undergoes conformational changes to transition from a closed state to an open state, facilitating calcium ion transfer. It is involved in key cellular processes including apoptosis activation through CAMK2 complex regulation, epithelial electrolyte and fluid secretion, and mitochondrial calcium-dependent apoptosis via interactions with HSPA9 and VDAC1. ITPR1 also regulates fertilization and egg activation by modulating calcium oscillation frequency and amplitude. It localizes to the endoplasmic reticulum membrane, secretory vesicle membranes, and perinuclear cytoplasmic regions, and functions in complexes at endoplasmic reticulum-mitochondria contact sites.