Recombinant TRPM3 protein (His tag)

Catalog Number	543668
Synonyms	Long transient receptor potential channel 3; LTrpC-3; LTrpC3; Melastatin-2; MLSN2
Species	Human
Expression System	E. coli
Accession	Q9HCF6
Molecular Weight	Predictes a molecular mass of 30.77 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 31 kDa band.

Product Information

Sequence Region	355-612
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, 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 355-612 aa (Q9HCF6) 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	This recombinant protein represents a stable 258-amino acid fragment (residues 355-612) of human Transient Receptor Potential Cation Channel Subfamily M Member 3 (TRPM3), a constitutively active calcium-permeable channel involved in thermosensation, pain signaling, and insulin secretion. The fragment was computationally selected for optimal solubility and stability, making it ideal for structural studies and biochemical characterization. TRPM3 functions as a constitutively active, non-selective divalent cation channel that is permeable to Ca^{2+}, Mn^{2+}, and Mg^{2+}, with particularly high permeability for calcium ions. This channel plays critical roles in various physiological processes including insulin and peptide secretion, vascular constriction and dilation, noxious heat sensing, and inflammatory and spontaneous pain sensitivity. In dorsal root ganglion neurons, TRPM3 serves as a thermosensitive channel for detecting noxious heat and mediating spontaneous pain. The channel can be enhanced by temperature increases and ligands such as the endogenous neurosteroid pregnenolone sulfate and sphingosine-1, while being suppressed by intracellular Mg^{2+}. TRPM3 also forms heteromultimeric channels with TRPM1 and mediates Zn^{2+} uptake into pancreatic beta cell secretory granules, thereby regulating insulin secretion. The protein is localized to the cell membrane as a multi-pass membrane protein and exists as multiple splice variants with significantly different biophysical properties.