

OTOP1 Protein, Mouse (Cell-Free, His)

Cat. No.:	HY-P702408
Synonyms:	Proton channel OTOP1; Otopetrin-1
Species:	Mouse
Source:	E. coli Cell-free
Accession:	Q80VM9 (M1-I600)
Gene ID:	21906
Molecular Weight:	68.6 kDa

PROPERTIES

AA Sequence

MPGGPGAPSS	PAASSGSSRA	APSGIAACPL	SPPPLARGSP
QASGPRRGAS	VPQKLAETLS	SQYGLNVFVA	GLLFLLAWAV
HATGVGKSDL	LCVLTALMLL	QLLWMLWYVG	RSYMQRRLIR
PKDTHAGARW	LRGSITLFAF	ITVVLGCLKV	AYFIGFSECL
SATEGVFPVT	HAVHTLLQVY	FLWGHAKDII	MSFKTLERFG
VIHSVFTNLL	LWANSVLNES	KHQLNEHKER	LITLGFGNIT
IVLDDHTPQC	NCTPPALCSA	LSHGIIYYLYP	FNIEYQILAS
TMLYVVLWKNI	GRRVDSSQHQ	KMQCRFDGVL	VGSVLGLTVL
AATI AVVVVY	MIHIGRSKSK	SESALIMFYL	YAITVLLLMG
AAGLVGSWIY	RVDEKSLDES	KNPARKLDVD	LLVATGSGSW
LLSWGSI LAI	ACAETRPPTYT	WYNLPYSVLV	I VEKYVQNIF
I IESVHLEPE	GVPEDVRTLR	VVTVCSSEAA	ALAASTLGSQ
GMAQDGS PAV	NGNLCLQQR	GKEDQESGWE	GATGTTRCLD
FLQGGMKRRL	LRNITAF LFL	CNISLWIPPA	FGCRPEYDNG
LEEIVFGFEP	WII VVNLAMP	FSIFYRMHAA	AALFEVYCKI

Appearance Lyophilized powder.

Formulation Lyophilized from a 0.22 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

Endotoxin Level <1 EU/µg, determined by LAL method.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH₂O. For long term storage it is recommended to add 5-50% of glycerol (final concentration). Our default final concentration of glycerol is 50%. Customers could use it as reference.

Storage & Stability Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The OTOP1 protein functions as a proton-selective channel with a specific role in transporting protons into cells. Notably, its proton channel activity displays weak sensitivity to voltage. This distinctive characteristic suggests that the protein is particularly crucial in cell types where changes in intracellular pH serve as signaling cues or regulatory elements for biochemical and developmental processes. In the inner ear's vestibular system, OTOP1 is indispensable for the formation and function of otoconia—calcium carbonate crystals responsible for sensing gravity and acceleration. Its role likely involves maintaining the pH conducive to otoconia formation. Additionally, OTOP1 plays a regulatory role in purinergic control of intracellular calcium in vestibular supporting cells and is implicated in sour taste perception by mediating proton entry within the cytosol of sour taste cells. Furthermore, OTOP1 contributes to energy metabolism, mitigating adipose tissue inflammation and offering protection against obesity-induced metabolic dysfunction.

Caution: Product has not been fully validated for medical applications. For research use only.

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