Data Sheet (Cat.No.TMPY-02289)

TargetMol

CIB2 Protein, Human, Recombinant (His)

General Information

Synonyms: DFNB48;calcium and integrin binding family member 2;USH1J;KIP2

Protein Construction: A DNA sequence encoding the mature form of human CIB2 (O75838) (Met 1-Ile 187) was expressed, with a polyhistide tag at the N-terminus. Predicted N terminal: Met

Species: Human

Expression Host: E. coli

Accession: O75838

Molecular Weight: 23.1 kDa (predicted); 27 kDa (reducing conditions)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 75 % as determined by SDS-PAGE

Endotoxin: Please contact us for more information.

Formulation: Supplied as sterile 50 mM Tris, 20% glycerol, pH 8.0.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Calcium and integrin-binding protein 2 (CIB2) belongs to a protein family with four known members, CIB1 through CIB4, which are characterized by multiple calcium-binding EF-hand domains. Sensorineural hearing loss is genetically heterogeneous. The mutations in CIB2, which encodes a calcium- and integrin-binding protein, are associated with nonsyndromic deafness (DFNB48) and Usher syndrome type 1J (USH1J). Furthermore, in zebrafish and Drosophila melanogaster, CIB2 is essential for the function and proper development of hair cells and retinal photoreceptor cells. We also show that CIB2 is a new member of the vertebrate Usher interactome. Variants in CIB2 can underlie either Usher syndrome type I (USH1J) or nonsyndromic hearing impairment (NSHI) (DFNB48). CIB2 is widely expressed in various human and animal tissues, mainly in skeletal muscle, nervous tissue, inner ear, and

retina. The CIB2 protein is responsible for maintaining Ca(2+) homeostasis in cells and interacting with integrins-transmembrane receptors essential for cell adhesion, migration, and activation of signaling pathways. Calcium signaling pathway is crucial for signal transduction in the inner ear, and integrins regulate hair cell differentiation and maturation of the stereocilia.

Reference

Blazejczyk M, et al. (2006) Myristoylation and membranous localization of Calmyrin2, a new member of Neuronal Calcium-Sensor proteins. FENS Forum Abstracts.

Hollenbach AD, et al. (2006) The EF-hand calcium-binding protein calmyrin inhibits the transcriptional and DNA-binding activity of Pax3. Biochimica et Biophysica Acta (BBA) - Gene Structure and Expression. 1574(3): 321-8.

Blazejczyk M, et al. (2009)Biochemical characterization and expression analysis of a novel EF-hand Ca2+ binding protein calmyrin2 (Cib2) in brain indicates its function in NMDA receptor mediated Ca2+ signaling. Archives of Biochemistry and Biophysics. 487(1): 66-78.

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