Data Sheet (Cat.No.TMPY-02860)

TargetMol

TAG1/Contactin 2 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	contactin 2 (axonal);TAG-1;D130012K04Rik;Tax
Protein Construction:	A DNA sequence encoding the mouse CNTN2 (Q61330) (Gln31-Glu 1013) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Gln 31
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q61330
Molecular Weight:	108.7 kDa (predicted); 110 kDa (reducing condition, due to glycosylation)

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:	> 97 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

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 recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Contactins are a subgroup of molecules belonging to the immunoglobulin superfamily that are expressed exclusively in the nervous system. The subgroup consists of six members: Contactin-1, Contactin-2 (TAG-1), Contactin-3 (BIG-1), BIG-2, Contactin-5 (NB-2) and NB-3. Since their identification in the late 1980s, Contactin-1 and Contactin-2 have been studied extensively. Axonal expression and the neurite extension activity of Contactin-1 and Contactin-2 attracted researchers to study the function of these molecules in axon guidance during

development. Contactin-1 and Contactin-2 have come to be known as the principal molecules in the function and maintenance of myelinated neurons. In contrast, the function of the other four members of this subgroup remained unknown until recently. Contactin-2, also known as CNTN2, is a glycosylphosphatidylinositol (GPI)-anchored neuronal membrane protein that functions as a cell adhesion molecule. The human, rat, and chicken Contactin-2 are alternatively known as TAX1 (transiently-expressed axonal glycoprotein), TAG1 (transient axonal glycoprotein), and axonin-1, respectively. Human Contactin-2 shares approximately 91% and 75% amino acid sequence identity with rat and chicken Contactin-2, respectively. Contactin-2 is expressed by a subset of neuronal populations in the developing central nervous system (CNS) and peripheral nervous system (PNS). Contactin-2 is also expressed by oligodendrocytes and Schwann cells, which are myelinating glial cells of the CNS and PNS, respectively. Contactin-2 may play a role in the formation of axon connections in the developing nervous system. Contactin-2 is also involved in glial tumorigenesis and may provide a potential target for therapeutic intervention. During embryonic development, Contactin-2 interacts either in a homophilic, or heterophilic fashion with various transmembrane proteins.

Reference

Kyriakopoulou K, et al. (2002) A combination of chain and neurophilic migration involving the adhesion molecule TAG-1 in the caudal medulla. Development 129 (2):287-96.
Traka M, et al. (2002) The neuronal adhesion protein TAG-1 is expressed by Schwann cells and oligodendrocytes and is localized to the juxtaparanodal region of myelinated fibers. J Neurosci. 22(8):3016-24.
Traka M, et al. (2003) Association of TAG-1 with Caspr2 is essential for the molecular organization of juxtaparanodal regions of myelinated fibers. J Cell Biol. 162(6):1161-72.
Soares S, et al. (2005) Neuronal and glial expression of the adhesion molecule TAG-1 is regulated after peripheral nerve lesion or central neurodegeneration of adult nervous system. Eur J Neurosci. 21(5):1169-80.
Derfuss T, et al. (2009) Contactin-2/TAG-1-directed autoimmunity is identified in multiple sclerosis patients and mediates gray matter pathology in animals. Proc Natl Acad Sci U S A. 106(20):8302-7.