Data Sheet (Cat.No.TMPY-03676)

TargetMol

Contactin 1 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	CNTN;F3cam;AW495098;usl;contactin 1
Protein Construction:	A DNA sequence encoding the mouse CNTN1 (NP_031753.1) (Met1-Leu1000) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Asp 21
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P12960
Molecular Weight:	69.4 kDa (predicted); 110-120 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:	> 90 % 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-1 is a cell surface adhesion molecule that is normally expressed by neurons and oligodendrocytes. Particularly high levels of Contactin-1 are present during brain development. Contactin-1 and Contactin-2 are differentially expressed in a number of neuronal tissues during development, and they interact with several ligands including Nr-CAM, L1, NCAM, neurocan, phosphacan, and tenascin. As a cell adhesion molecule, Contactin-1 plays a role in the formation of axon connections in the developing nervous system. It was demonstrated that Contactin-1 participates in signal pathways via its association with Contactin-associated protein (CNTNAP1), receptor protein tyrosine phosphatase beta (RPTPb) and NOTCH1. Contactin-1 is also involved in paranodal axo-glial junction formation and oligodendrocytes generation. Furthermore, studies indicated that Contactin-1 functions importantly in the invasion and metastasis of lung adenocarcinoma cells. Contactin-1 may also significantly influence the functional expression and distribution of Na+channels in neurons.

Reference

Kazarinova NK, et al. (2001) Contactin associates with Na+ channels and increases their functional expression. J Neurosci. 21 (19):7517-25.

Eckerich C, et al. (2006) Contactin is expressed in human astrocytic gliomas and mediates repulsive effects. Glia. 53 (1):1-12.

Su JL, et al. (2006) Knockdown of contactin-1 expression suppresses invasion and metastasis of lung adenocarcinoma. Cancer research 66 (5):2553-61.

Compton AG, et al. (2008) Mutations in contactin-1, a neural adhesion and neuromuscular junction protein, cause a familial form of lethal congenital myopathy. Am J Hum Genet. 83 (6):714-24.

Mikami T, et al. (2009) Contactin-1 is a functional receptor for neuroregulatory chondroitin sulfate-E. J Biol Chem. 284(7):4494-9.