Recombinant Human Contactin-5

Catalog Number: 3030-CN

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Glu19-Gln1059, with a C-terminal 10-His tag Accession # O94779
N-terminal Sequence Analysis	Glu19
Predicted Molecular Mass	115 kDa

SPECIFICATIONS

SDS-PAGE	145 kDa, reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Able to significantly enhance neurite outgrowth when immobilized as a 3 µL droplet containing 100 ng on a nitrocellulose-coated microplate.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Contactin-5 (CNTN5), also known as NB-2, is a neural adhesion molecule in the contactin family of the immunoglobulin superfamily. The contactin family comprises six members (CNTN1/F3, CNTN2/TAG-1, CNTN3/BIG-1, CNTN4/BIG-2, CNTN5/NB-2 and CNTN6/NB-3) that are characterized by the presence of six Ig-like domains, four fibronectin type III-like repeats, and a glycosylphosphatidylinositol (GPI)-anchoring domain (1, 2). The human Contactin-5 cDNA exists in two splice forms which contain an 18 amino acid (aa) signal sequence and a 28 aa C-terminal propeptide. The long isoform is a 1082 aa protein that shares 91% aa sequence identity with rat and mouse Contactin-5. The short isoform lacks the first 74 aa at the N-terminus of the long isoform. Human Contactin-5 shares 43%, 41%, 52%, 52%, and 48% aa identity with Contactins-1 ,-2 ,-3 ,-4, and -6, respectively (3). Contactin family proteins exist as membrane-bound proteins, but can also be released as soluble proteins by GPI-specific phospholipase D. The gene encoding Contactin-5 is localized to a chromosomal region associated with schizophrenia and the neuronal disorder Jacobsen syndrome (4). The highest expression of human Contactin-5 is seen in occipital lobe and amygdala, followed by cerebral cortex, frontal lobe, thalamus, and temporal lobe (4). In rat, Contactin-5 is highly expressed specifically in structures of the central auditory pathway (5). Also in rat, Contactin-5 has been shown to promote neurite outgrowth of cerebral cortical neurons *in vitro* (5). Deficient Contactin-5 expression in mice results in impaired neuronal activity of the central auditory system (6).

References:

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2. Denisenko-Nehrbass, N. *et al.* (2002) J. Physiol. Paris **96**:99.
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5. Ogawa, J. *et al.* (2001) J. Neurosci. Res. **65**:100.
6. Li, H. *et al.* (2003) Eur. J. Neurosci. **17**:929.

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