

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Human UNC5H3 (Ala40 - Asp376) Accession # O95185	IEGRMD	Human IgG ₁ (Pro100 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Ala40		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	64.6 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	90 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized rhUNC5H3/Fc Chimera at 5 µg/mL (100 µL/well) can bind rcNetrin-1 with a linear range of 6-400 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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. <ul style="list-style-type: none"> ● 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

Caenorhabditis elegans UNC5 (UNC = behaviorally uncoordinated) and its mammalian homologues (including rat UNC5H1 and H2, mouse UNC5H2 and H3 (also known as rostral cerebellar malformation, RCM), and human UNC5H3 and H4) are transmembrane proteins belonging to the immunoglobulin (Ig) superfamily. All UNC5 family members have two Ig and two thrombospondin type 1 domains in their extracellular regions, as well as a conserved ZU-5 domain, a DCC (Deleted in Colorectal Cancer)-binding domain (DB) and a C-terminal death domain (DD) in their cytoplasmic regions (1, 2).

UNC5 family proteins are receptors for the netrin/UNC6 (netr: Sanskrit for "one who guides") family of secreted axon guidance cues that are laminin-related proteins. Netrin family proteins can act as a chemoattractant for some axons and as a chemorepellent for others. Besides UNC5, netrin family proteins also bind to the DCC family of type I transmembrane receptors that share sequence similarity with proteins of the NCAM family, and adenosine A2b receptor, a G protein-coupled seven-transmembrane receptor belonging to the adenosine receptor family (3, 4). *In vitro*, netrin binding to DCC family receptors in the absence of UNC5 is associated with axon attraction. However, the DCC-mediated attraction to netrin is converted to repulsion by binding of UNC5 to the DCC-netrin complex. *In vivo*, the mechanisms of netrin-dependent axon attraction and repulsion are more complex and may include UNC5-mediated repulsion that is independent of DCC (1, 5). Besides their roles in axon guidance and neuronal migration, the UNC5 and DCC families also act as dependence receptors and exert pro-apoptotic effects in the absence of netrin (6).

Human UNC5H3 cDNA encodes a 931 amino acid (aa) residues type I membrane protein with a putative 39 aa signal peptide and 337 aa extracellular domain. The extracellular domain of human UNC5H3 shares approximately 98%, 73% and 66% amino acid sequence similarity with mouse UNC5H3, rat UNC5H2 and human UNC5H4, respectively.

References:

1. Hong, K. *et al.* (1999) *Cell* **97**:927.
2. Leonardo, E.D. *et al.* (1997) *Nature* **386**:833.
3. Culotti, J.B. and D.C. Merz (1998) *Curr. Opin. Cell Biol.* **10**:609.
4. Corset, V. (2000) *Nature* **407**:747.
5. Merz, D.C. (2001) *Genetics* **158**:1071.
6. Llambi, F. *et al.* (2001) *The EMBO Journal* **20**:2715.

PRODUCT SPECIFIC NOTICES

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U.S. Patent # 5,939,271, 6,277,585, and other U.S. and international patents pending.