

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Rat UNC5H1 (Gln26 - Asp358) Accession # O08721	IEGRMD	Human IgG ₁ (Pro100 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	No results obtained: Gln26 predicted		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	63.4 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	85-95 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized rUNC5H1/Fc Chimera at 5 µg/mL (100 µL/well) can bind rchNetrin-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

UNC5H1, also known as UNC5A, is a member of the UNC5 (*Drosophila* uncoordinated-5 homology) family of type I transmembrane proteins within the immunoglobulin (Ig) superfamily. UNC5H1-4 (UNC5A-D, respectively) have two Ig and one or two thrombospondin type 1 (TSP1) domains in their extracellular regions, and a 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). Rat UNC5H1 cDNA encodes 898 amino acids (aa) including a 25 aa signal peptide, a 336 aa extracellular domain with two TSP1 domains, and a 516 aa cytoplasmic domain. Within the extracellular domain, rat UNC5H1 shares approximately 98% aa sequence identity with mouse and human UNC5H1 (except for the lack of one TSP1 domain in human UNC5H1), and 65% aa identity with rat UNC5H2/UNC5B. UNC5 proteins are receptors for the netrin/UNC6 family of laminin-related secreted axon guidance cues; UNC5H1 has been shown to bind netrin 1, 3 and 4 (2 - 4). Netrins can act as a chemoattractant for some axons in the presence of DCC (Deleted in Colorectal Cancer) proteins. However, UNC5H1 association with netrins changes them to chemorepellents (1, 5, 6). UNC5H1 is expressed after developmental migration of motor neurons, presumably halting their migration (7). UNC5H1 can be removed from the cell surface via endocytosis following phosphorylation by protein kinase C (PKC) in complex with PICK1. In turn, PKC activity is regulated by the neuronal G protein-coupled adenosine receptor A2b R (6, 8, 9). The UNC5 and DCC families also act as dependence receptors, and are pro-apoptotic in the absence of netrins (10 - 13). UNC5H1 transcription is enhanced by the tumor suppressor p53, allowing increased apoptosis of tumor cells in the absence of netrin and the presence of NRAGE (13, 14).

References:

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