

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat UNC5H1 in direct ELISAs and Western blots. In Western blots, less than 5% cross-reactivity with recombinant rat UNC5H2, recombinant human (rh) UNC5H3 and rhUNC5H4 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat UNC5H1 Gln26-Asp358 Accession # O08721
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Rat UNC5H1 Fc Chimera (Catalog # 1405-UN)
Immunocytochemistry	5-15 µg/mL	Immersion fixed rat cortical neural stem cells differentiated by growth factor withdrawal
Blockade of Receptor-ligand Interaction	In a functional ELISA, 2-6 µg/mL of this antibody will block 50% of the binding of 100 ng/mL of Recombinant Chicken Netrin-1 (Catalog # 128-N1) to immobilized Recombinant Rat UNC5H1 Fc Chimera (Catalog # 1405-UN) coated at 2 µg/mL (100 µL/well). At 50 µg/mL, this antibody will block >90% of the binding.	

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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

BACKGROUND

Caenorhabditis elegans UNC5 (UNC = behaviorally uncoordinated) and its mammalian homologues, UNC5H1-4, UNC5A-D, and rostral cerebellar malformation (RCM), 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). Rat UNC5H1 cDNA encodes a 898 amino acid (aa) residues type I membrane protein with a putative 25 aa signal peptide and 332 aa extracellular domain. The extracellular domain of rat UNC5H1 shares approximately 98% and 65% amino acid sequence identity with mouse UNC5H1 and rat UNC5H2, respectively.

UNC5 family proteins are receptors for the netrin/UNC6 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 and to 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).

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) *EMBO Journal* **20**:2715.