

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human UNC5H3 in direct ELISAs and Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant rat UNC5H2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human UNC5H3 Ala40-Asp376 Accession # O95185
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 Human UNC5H3 Fc Chimera (Catalog # 1005-UN)
Immunohistochemistry	5-15 µg/mL	Immersion fixed paraffin-embedded sections of human kidney

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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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. ● 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 (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 chemoattractants for some axons and as chemorepellents 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) 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% aa sequence similarity with mouse UNC5H3, rat UNC5H2, and human UNC5H4, respectively.

References:

1. Hong, K. *et al.* (1999) *Cell* **97**:927.
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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 J.* **20**:2715.