

#### DESCRIPTION

|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Rat  |
| <b>Specificity</b>        | Detects rat UNC5H2 in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human (rh) UNC5H3 and recombinant rat UNC5H1 is observed, and less than 1% cross-reactivity with rhUNC5H4 is observed. |
| <b>Source</b>             | Polyclonal Goat IgG  |
| <b>Purification</b>       | Antigen Affinity-purified  |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant rat UNC5H2<br>Gly27-Asp373<br>Accession # O08722   |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.  |

#### 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  |
|-----------------------------|---------------------------|---|
| <b>Western Blot</b>         | 0.1 µg/mL                 | Recombinant Rat UNC5H2 Fc Chimera (Catalog # 1006-UN) |
| <b>Immunohistochemistry</b> | 5-15 µg/mL                | Immersion fixed frozen sections of rat brain          |

#### PREPARATION AND STORAGE

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Reconstitute at 0.2 mg/mL in sterile PBS.  |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C   |
| <b>Stability &amp; Storage</b> | <b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

#### 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).

Rat UNC5H2 cDNA encodes a 945 amino acid residues (aa) type I membrane protein with a putative 26 aa signal peptide and 347 aa extracellular domain. The extracellular domain of rat UNC5H2 shares approximately 65%, 73% and 73% aa sequence similarity with that of rat UNC5H1, human UNC5H3 and mouse UNC5H3, 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) *EMBO J.* **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.