

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse Olfactomedin-1/Noelin-1 in direct ELISAs and Western blots.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse Olfactomedin-1/Noelin-1 Ser2-Arg481 Accession # NP_062371
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or 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 Mouse Olfactomedin-1/Noelin-1 (Catalog # 4636-NL)

## 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. *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

Olfactomedin-1 (neuronal olfactomedin-related endoplasmic reticulum-localized-1), also known as Olfactomedin-1 or pancortin, is a 75 kDa secreted extracellular matrix glycoprotein expressed in the brain (1-3). Alternate promoter usage and splicing creates four forms of Noelin (Noelin 1-4) that are combinations of a common central region with alternate N- and C-termini (3, 4). Noelin-1 is the longest of the four isoforms, encoding a 16 amino acid (aa) signal sequence and a 469 aa mature protein with a coiled-coil region for multimerization and an olfactomedin-like domain. The shortest isoforms, Noelin-3 and -4, are truncated within the coiled-coil region and lack the olfactomedin-like domain (4). In the species tested, these isoforms appear to oppose actions of the longer isoforms (5). All isoforms are capable of forming homo- or heterodimers through cysteines in their common central region (2). The C-terminus of Noelin-1 (mouse aa 482-485) contains a putative endoplasmic reticulum retention sequence that has not been included in the R&D Systems protein (6). Mouse Noelin-1 (aa 17-481) shares > 99%, 99%, 97%, 96% and 93% aa identity with corresponding regions of rat, human, opossum, chicken and *Xenopus* Noelin-1, respectively. In vivo expression patterns differ somewhat between species (1). In chick early development, Noelin-1 shows highest concentration in areas that produce neural crest cells and is produced by migrating neural crest cells (7). Overproduction of Noelin-1 prolongs neural crest cell formation (7). Noelin-1 is also expressed in mouse neural crest, but not frog (1-3). All three species express Noelin-1 later in differentiating neural tissues in the spinal cord, brain and cranial ganglia (1-3).

### References:

1. Moreno, T.A. & M. Bronner-Fraser (2002) *Mech. Dev.* **119**:121.
2. Ando, K. *et al.* (2005) *Neuroscience* **133**:947.
3. Nagano, T. *et al.* (1998) *Brain Res. Mol. Brain Res.* **53**:13.
4. Danielson, P.E. *et al.* (1994) *J. Neurosci. Res.* **38**:468.
5. Moreno, T.A. & M. Bronner-Fraser (2005) *Dev. Biol.* **288**:434.
6. Moreno, T.A. & M. Bronner-Fraser (2001) *Dev. Biol.* **240**:340.
7. Barembaum, M. *et al.* (2000) *Nat. Cell Biol.* **2**:219.