

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Plexin B3 in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 905805
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant human Plexin B3 His45-Gln1255 Accession # Q9ULL4
<b>Conjugate</b>	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### 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>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	A172 human glioblastoma cell line

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### BACKGROUND

Plexin B3 is a type I transmembrane glycoprotein that belongs to the Plexin B subfamily of semaphorin receptors (1, 2). Human Plexin B3 contains a 44 amino acid (aa) signal sequence, a 1211 aa extracellular domain (ECD), a 21 aa transmembrane domain, and a 633 aa cytoplasmic domain that includes features common to other Plexins, such as an LRR (C1) and LRF (C2) domain, and a PDZ motif common to B Plexins (1). The PDZ motif is thought to be involved in RhoA activation and axonal growth cone collapse downstream of semaphorin engagement (3). The human Plexin B3 ECD shares 81%, 81%, 83% and 75% aa identity with mouse, rat, bovine and canine Plexin B3, respectively. It contains a sema domain and a Plexin-Semaphorin-Integrin (PSI) or Met-Related Sequence (MRS) domain, each of which contains a potential proteolytic cleavage site (2). Detection of 160 and 140 kDa species along with the full-length 260 kDa Plexin B3 in homogenates of human neocortex indicates that proteolytic processing may occur *in vivo* (2). The ECD also contains four glycine/proline-rich IPT/TIG domains, which are immunoglobulin-like domains found in Plexins, transcription factors, and the scatter factor receptors Met and Ron. B Plexins, including Plexin B3, can interact with Met and Ron, activating these receptors upon semaphorin engagement (4, 5). Plexin B3 and its identified ligand, the transmembrane semaphorin Sema5A, are both expressed during differentiation and migration of central nervous system oligodendrocytes (5-7). However, the developmental functions of Sema5A are likely independent of Plexin B3, which is not significantly expressed prenatally (8). In turn, Plexin B3 may exhibit Sema5A-independent activity, as homophilic interactions of sema domains are reported to stimulate neurite outgrowth of postnatal cerebellar neurons (2).

#### References:

1. Negishi, M. *et al.* (2005) *Cell. Mol. Life Sci.* **62**:1363.
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3. Swiercz, J.M. *et al.* (2002) *Neuron* **35**:51.
4. Conrotto, P. *et al.* (2004) *Oncogene* **23**:5131.
5. Artigiani, S. *et al.* (2004) *EMBO Rep.* **5**:710.
6. Goldberg, J.L. *et al.* (2004) *J. Neurosci.* **24**:4989.
7. Worzfeld, T. *et al.* (2004) *Eur. J. Neurosci.* **19**:2622.
8. Fiore, R. *et al.* (2005) *Mol. Cell. Biol.* **25**:2310.

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