

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Plexin B3 in direct ELISAs and Western blots. In direct ELISAs, approximately 40% cross-reactivity with recombinant mouse Plexin B3 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Plexin B3 His45-Gln1255 (Glu1156Asp) Accession # Q9ULL4
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *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
Western Blot	1 µg/mL	See Below
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

<p>Western Blot</p> <p>Detection of Human Plexin B3 by Western Blot. Western blot shows lysates of rat embryonic hippocampal neurons. PVDF membrane was probed with 1 µg/mL Sheep Anti-Human Plexin B3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4958) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). For additional reference, Recombinant Human Plexin B3 (Catalog # 4958-PC) (1 ng) was included. A specific band for Plexin B3 was detected at approximately 140 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.</p>	<p>Flow Cytometry</p> <p>Detection of Plexin B3 in A172 Human Cell Line by Flow Cytometry. A172 human glioblastoma cell line was stained with Sheep Anti-Human Plexin B3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4958, filled histogram) or isotype control antibody (Catalog # 5-001-A, open histogram), followed by Allophycocyanin-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # F0127).</p>
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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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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.

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:

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