R&D SYSTEMS
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Mouse Plexin B2 Antibody

Monoclonal Rat IgG_{2A} Clone # 772417

Catalog Number: MAB6836

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Plexin B2 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Plexin B2 is observed.
Source	Monoclonal Rat IgG_{2A} Clone # 772417
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse Plexin B2 Leu20-Trp1029 Accession # B2RXS4
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.

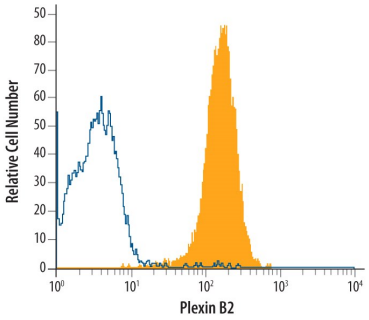
APPLICATIONS

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
Flow Cytometry	2.5 µg/10^6 cells	See Below
Immunohistochemistry	8-25 µg/mL	See Below

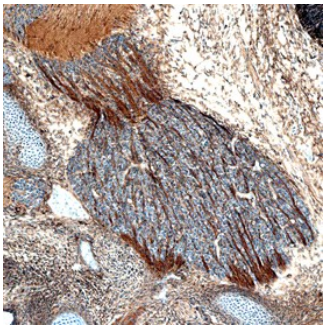
DATA

Flow Cytometry



Detection of Plexin B2 in D3 Mouse Cell Line by Flow Cytometry.
D3 mouse embryonic stem cell line was stained with Rat Anti-Mouse Plexin B2 Monoclonal Antibody (Catalog # MAB6836, filled histogram) or isotype control antibody (Catalog # MAB006, open histogram), followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # F0113).

Immunohistochemistry



Plexin B2 in Mouse Embryo.
Plexin B2 was detected in immersion fixed frozen sections of mouse embryo (15 d.p.c.) using Rat Anti-Mouse Plexin B2 Monoclonal Antibody (Catalog # MAB6836) at 25 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Rat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS017) and counterstained with hematoxylin (blue). Specific staining was localized to neuronal processes. View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 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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BACKGROUND

Plexin B2 is a 240 kDa type I transmembrane (TM) glycoprotein of the Plexin B family of semaphorin receptors (1, 2). The mouse Plexin B2 cDNA encodes 1842 amino acids (aa) that include a 19 aa signal sequence, a 1182 aa extracellular domain (ECD), a 21 aa TM domain, and a 620 aa cytoplasmic region. The ECD contains one semaphorin domain (aa 20-468) and three IPT repeats (aa 806-1096). The ECD may be cleaved into two subunits, a 170 kDa α-chain (aa 20-1168) and an 80 kDa TM β-chain, that remain noncovalently linked (1). Multiple splice variants may exist. Within aa 20-1029 in the ECD, mouse Plexin B2 shares 82%, 93%, 80% and 79% aa identity with human, rat, canine and bovine Plexin B2, respectively. The B Plexins (B1, B2 and B3) share approximately 40% aa identity with each other. Plexin B2 mRNA is expressed in proliferating cerebellar granule cell progenitors, neuroepithelium, developing neurons, growth plate chondrocytes, tooth bud inner enamel epithelium, glomeruli and mesenchyme of the developing kidney, and in germinal center B lymphocytes when T cell help is present (3-7). Plexin B2 is often co-expressed with Plexin B1, and the two may form heterodimers (1, 4, 6). Genetic deletion of mouse Plexin B2 results in defects in proliferation and migration of cerebellar granule cells, abnormal development of the neural tube and disorganization of the embryonic brain; these defects are not seen when Plexin B1 is deleted (8-10). In adults, Plexin B2 is expressed in specialized vascular endothelia, pancreatic islets of Langerhans, and adrenal glands (11). Plexin B2 serves as a receptor for type 4 semaphorins, especially Sema4C and Sema4G (8-12). B Plexins, including Plexin B2, can bind the scatter factor receptors, Met and Ron, and activate them upon semaphorin engagement (1, 13).

References:

1. Artigiani, S. *et al.* (2003) J. Biol. Chem. **278**:10094.
2. Negishi, M. *et al.* (2005) Cell. Mol. Life Sci. **62**:1363.
3. Friedel, R.H. *et al.* (2007) J. Neurosci. **27**:3921.
4. Worzfeld, T. *et al.* (2004) Eur. J. Neurosci. **19**:2622.
5. Zhang, M. *et al.* (2008) Bone **43**:511.
6. Perala, N.M. *et al.* (2005) Gene Expr. Patterns **5**:355.
7. Yu, D. *et al.* (2008) Immunol. Cell Biol. **86**:3.
8. Deng, S. *et al.* (2007) J. Neurosci. **27**:6333.
9. Hirschberg, A. *et al.* (2010) Mol. Cell. Biol. **30**:764.
10. Maier, V. *et al.* (2011) Mol. Cell. Neurosci. **46**:419.
11. Zielonka, M. *et al.* (2010) Exp. Cell Res. **316**:2477.
12. Yukawa, K. *et al.* (2010) Int. J. Mol. Med. **25**:225.
13. Conrotto, P. *et al.* (2004) Oncogene **23**:5131.

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