R&D SYSTEMS
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Human Plexin D1 Antibody

Monoclonal Mouse IgG_1 Clone # 752815

Catalog Number: MAB41601

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Plexin D1 in ELISAs and Western blots.
Source	Monoclonal Mouse IgG_1 Clone # 752815
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Plexin D1 Leu47-Ala1271 Accession # Q9Y4D7
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.

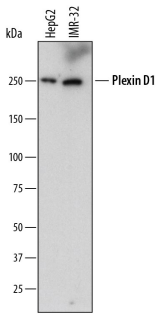
APPLICATIONS

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	2 µg/mL	See Below

DATA

Western Blot



Detection of Human Plexin D1 by Western Blot. Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line and IMR-32 human neuroblastoma cell line. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human Plexin D1 Monoclonal Antibody (Catalog # MAB41601) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Plexin D1 at approximately 250 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

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 D1 is a type I transmembrane glycoprotein that is the prototype of the plexin D subfamily of semaphorin receptors (1, 2). Human Plexin D1 contains a 46 amino acid (aa) signal sequence, a 1225 aa extracellular domain (ECD), a 21 aa transmembrane domain, and a 633 aa cytoplasmic domain that includes features common to other plexins (1). The human Plexin D1 ECD shares 89% identity with mouse Plexin D1, and ~84-92% aa identity based on incomplete sequences of rat, bovine, porcine and canine Plexin D1. It contains a sema domain, two plexin-semaphorin-integrin (PSI) or Met-related sequence (MRS) cysteine-rich motifs, and three glycine/proline-rich IPT/TIG domains which are immunoglobulin-like domains found in plexins, transcription factors, and the scatter factor receptors Met and Ron (1, 2). Isoforms of 1787 and 1747 aa have been sequenced; these contain a 178 aa N-terminal deletion with or without a longer alternate C-terminus (3). Like other Sema/plexin interactions, Plexin D1 interacts with Sema3C or Sema4A via neuropilins. Interaction with Sema3E, however, is direct (4). Plexin D1/Sema3E interaction mediates vascular guidance during development or angiogenesis; deletion of either molecule results in similar, profound cardiac abnormalities (4, 5). Plexin D1 is also expressed in lymphocytes, osteoblasts, the neural crest and the central nervous system during development (2, 6). In the brain, the presence of neuropilin can change Plexin D1/Sema3E interaction from an attractive to a repulsive signal (7, 8). Plexin D1 directs migration of thymocytes to the thymic medulla, probably through repulsion of Sema3E (9). Endothelial cell Plexin D1 binding to Sema4A can oppose VEGF and suppresses tumor angiogenesis, and expression of Sema3E correlates inversely with tumor metastasis, indicating that Plexin D1 is anti-metastatic in the presence of its ligands (10, 11).

References:

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