

## DESCRIPTION

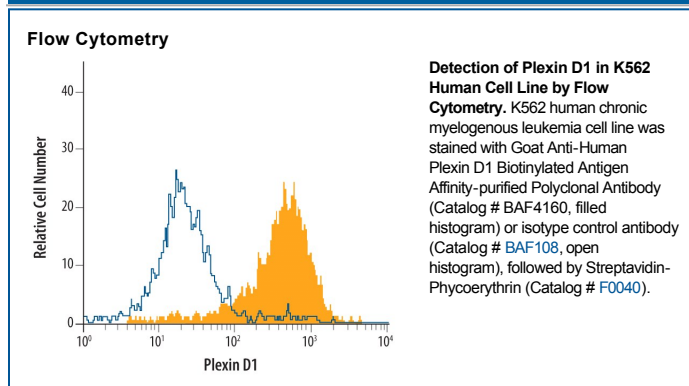
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Plexin D1 in Western blots. In Western blots, less than 1% cross-reactivity with recombinant mouse (rm) Plexin A1, rmPlexin A3, and recombinant human Plexin B1 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Plexin D1 Leu47-Ala1271 Accession # Q9Y4D7
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human Plexin D1 (Catalog # 4160-PD)
<b>Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	See Below

## DATA



## 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.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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

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:

1. Negishi, M. *et al.* (2005) *Cell. Mol. Life Sci.* **62**:1363.
2. Van Der Zwaag, B. *et al.* (2002) *Dev. Dyn.* **225**:336.
3. Entrez protein Accession # Q9Y4D7, EAW79239, EAW79240.
4. Gu, C. *et al.* (2005) *Science* **307**:265.
5. Gitler, A.D. *et al.* (2004) *Developmental Cell* **7**:107.
6. Zhang, Y. *et al.* (2009) *Dev. Biol.* **325**:82.
7. Chauvet, S. *et al.* (2007) *Neuron* **56**:807.
8. Pecho-Vrieseling, E. *et al.* (2009) *Nature* **459**:842.
9. Choi, Y.I. *et al.* (2008) *Immunity* **29**:888.
10. Toyofuku, T. *et al.* (2007) *EMBO J.* **26**:1373.
11. Roodink, I. *et al.* (2008) *Am. J. Pathol.* **173**:1873.