Human VEGF-D Antibody
Monoclonal Mouse IgG1, Clone # 78923
Catalog Number: MAB286

DESCRIPTION
Species Reactivity Human
Specificity Detects human VEGF-D in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant mouse (rm) VEGF-D, rmVEGF-B, recombinant human (rh) VEGF-B and rhVEGF is observed.
Source Monoclonal Mouse IgG1 Clone # 78923
Purification Protein A or G purified from ascites
Immunogen Mouse myeloma cell line NSO-derived recombinant human VEGF-D Phe93-Ser201 Accession # O43915
Endotoxin Level <0.10 EU per 1 μg of the antibody by the LAL method.
Formulation Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. 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.

Table: Recommended Concentration

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<th>Sample</th>
<th>Concentration</th>
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<td>Immunohistochemistry</td>
<td>8-25 μg/mL</td>
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Neutralization Measured by its ability to neutralize VEGF-D-induced proliferation in HMVEC human microvascular endothelial cells. Achen, M. et al. (1998) Proc. Natl. Acad. Sci. USA 95:548. The Neutralization Dose (ND50) is typically 3-8 μg/mL in the presence of 1 μg/mL Recombinant Human VEGF-D.

DATA

Immunohistochemistry
VEGF-D in Human Placenta. VEGF-D was detected in immersion fixed frozen sections of human placenta (cross-section through a blood vessel) using 15 μg/mL Mouse Anti-Human VEGF-D Monoclonal Antibody (Catalog # MAB286) overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent - Basic (Catalog # CTS013). Tissue was stained with the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Neutralization
Cell Proliferation Induced by VEGF-D and Neutralization by Human VEGF-D Antibody. Recombinant Human VEGF-D (Catalog # 622-VD) stimulates proliferation in HMVEC human microvascular endothelial cells in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human VEGF-D (1 μg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human VEGF-D Monoclonal Antibody (Catalog # MAB286). The ND50 is typically 3-8 μg/mL.

PREPARATION AND STORAGE
Reconstitution Reconstitute at 0.5 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 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.
Vascular endothelial growth factor D (VEGF-D), also known as c-fos-induced growth factor (FIGF), is a secreted glycoprotein of the VEGF/PDGF family. VEGFs regulate angiogenesis and lymphangiogenesis during development and tumor growth, and are characterized by eight conserved cysteine residues that form a cystine knot structure (1-3). VEGF-C and VEGF-D, which share 23% amino acid (aa) sequence identity, are uniquely expressed as proproteins that contain long N- and C-terminal propeptide extensions around the VEGF homology domain (VHD) (1, 2). Proteolytic processing of the 354 aa VEGF-D proproteins creates a secreted proprotein. Further processing by extracellular serine proteases, such as plasmin or furin-like proprotein convertases, forms mature VEGF-D consisting of non-covalently linked 42 kDa homodimers of the 117 aa VHD (4-6). Mature human VEGF-D shares 94%, 95%, 99%, 97%, and 93% aa identity with mouse, rat, equine, canine, and bovine VEGF-D, respectively (4, 5). It is expressed in adult lung, heart, muscle, and small intestine, and is most abundantly expressed in fetal lungs and skin (1-4). Mouse and human VEGF-D are ligands for VEGF Receptor 3 (VEGF R3, also called Flt-4) that are active across species and show enhanced affinity when processed (7). Processed human VEGF-D is also a ligand for VEGF R2, also called Flk-1 or KDR (7). VEGF R3 is strongly expressed in lymphatic endothelial cells and is essential for regulation of the growth and differentiation of lymphatic endothelium (1, 2). While VEGF-C is the critical ligand for VEGF R3 during embryonic lymphatic development, VEGF-D is most active in neonatal lymphatic maturation and bone growth (8-10). Both promote tumor lymphangiogenesis (11). Consonant with their activity on VEGF receptors, binding of VEGF-C and VEGF-D to neuropilins contributes to VEGF R3 signaling in lymphangiogenesis, while binding to integrin αvβ3 mediates endothelial cell adhesion and migration (12, 13).

References: