Human PDGF-C Antibody

Monoclonal Mouse IgG_{2B} Clone # 619346

Catalog Number: MAB1560

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human PDGF-C in direct ELISAs. In direct ELISAs, 100% cross-reactivity with recombinant mouse PDGF-CC is observed, and no cross-reactivity with recombinant human (rh) PDGF-AA, rhPDGF-AB, rhPDGF-BB, rhPDGF-D, or recombinant rat PDGF-AB is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 619346
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	E.coli-derived recombinant human PDGF-C Val235-Gly345 Accession # Q9NRA1
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. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

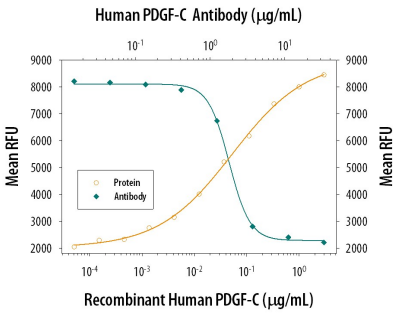
APPLICATIONS

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.*

Neutralization	Measured by its ability to neutralize PDGF−CC -induced proliferation in the NR6R−3T3 mouse fibroblast cell line [Raines, E.W. et al. (1985) Methods Enzymol. 109:749]. The Neutralization Dose (ND_{50}) is typically 0.6-3 ug/ml in the presence of 1 ug/mL Recombinant Human PDGF−C (Catalog # 1687-CC).

DATA

Neutralization



Proliferation Induced by PDGF-CC and Neutralization by Human PDGF-C Antibody. Recombinant Human PDGF-CC (Catalog # 1687-CC) induces proliferation in the NR6R-3T3 mouse fibroblast cell line in a dose-dependent manner (orange line), as measured by Resazurin (Catalog # AR002). Proliferation elicited by Recombinant Human PDGF-CC (1 ug/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human PDGF-C Monoclonal Antibody (Catalog # MAB1560). The ND_{50} is typically 0.6-3 ug/ml.

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

The platelet-derived growth factor (PDGF) family consists of proteins derived from four genes (PDGF-A, -B, -C, and -D) that form four disulfide-linked homodimers (PDGF-AA, -BB, -CC, and -DD) and one heterodimer (PDGF-AB) (1). These proteins regulate diverse cellular functions by binding to and inducing the homo- or hetero-dimerization of two receptor tyrosine kinases (PDGF Rα and Rβ). Within the PDGF family, PDGF-C and PDGF-D constitute a subgroup that shares similar structural organization (2, 3). Both proteins are secreted as inactive homodimeric latent growth factors. Each monomer has two distinct protein domains: an N-terminal CUB domain; and a C-terminal PDGF/VEGF homology domain that shares 27-35% sequence identity with the corresponding regions of other PDGF family members. An 80-90 amino acid residue hinge region connects the two domains. Sequential removal of the CUB domains in the homodimeric latent growth factor by extracellular proteolytic cleavage at the hinge region is required to release the bioactive PDGF/VEGF homology domain(1). Twelve cysteine residues are found within the PDGF/VEGF homology domain of PDGF-C, including the characteristic eight invariant cysteine residues involved in inter- and intra-chains disulfide-bonds needed for the formation of the cysteine-knot structure. Bioactive PDGF-CC binds with high-affinity to PDGF Rα but not PDGF Rβ and activates PDGF Rα homodimerization (1). PDGF-CC has also been shown to activate PDGF Rαβ heterodimers (1). PDGF-CC is expressed in multiple embryonic and adult cell types and tissues. During embryonic development, PDGF-CC is involved in ductal morphogenesis (4). PDGF-CC is a potent angiogenic factor that stimulates vessel growth in the mouse cornea pocket assay and in the CAM assay (5). It stimulates coronary artery smooth muscle cell proliferation and may play an important role in cardiovascular development and function (6). PDGF-CC is also expressed in many tumors and tumor cell lines and has a causative role in tumorigenesis (7). Mature human and mouse PDGF-C share 93.7% amino acid sequence identity.

References:

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3. Li, X. *et al.* (2000) Nature Cell Biol. **2**:302.
4. Aase, K. *et al.* (2002) Mech Dev. **110**:187.
5. Cao, R.H. *et al.* (2002) FASEB J. **16**:1575.
6. Gilbertson, D. *et al.* (2001) J. Biol. Chem. **276**:27406.
7. Zwerner, J.P. and W.A. May (2001) Oncogene **20**:626.

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