Technical Data Sheet

BV421 Mouse Anti-Human CD140a

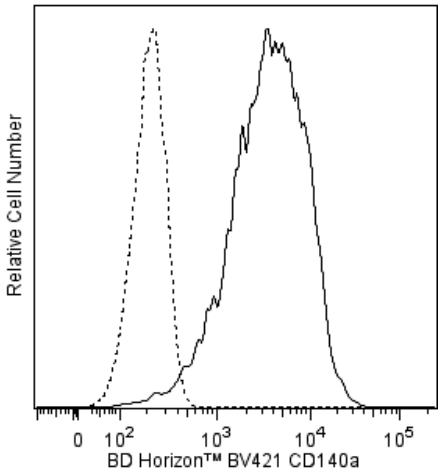
Product Information

Material Number:	**562799**
Alternate Name:	PDGF Receptor α; PDGFRA; PDGFRα; PDGF-R-alpha; PDGFR2; PGFRA; RHEPDGFR
Size:	50 tests
Vol. per Test:	5 µl
Clone:	αR1
Immunogen:	Human PDGFRα Transfected Cell Line
Isotype:	Mouse (BALB/c) IgG2a, κ
Reactivity:	QC Testing: Human
Workshop:	NA
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The αR1 monoclonal antibody specifically binds to the human platelet derived growth factor (PDGF) receptor α (PDGFRα), also known as CD140a. CD140a is a 170 kDa single transmembrane glycoprotein expressed on fibroblasts, smooth muscle cells, glial cells and chondrocytes. PDGF receptors α and β are single glycoproteins with intracellular tyrosine kinase domains. They are structurally similar to the M-CSF receptor and CD117 (c-kit). Their ligand, PDGF, is a mitogen for connective tissue cells and glial cells. PDGF plays a role in wound healing and it also acts as a chemoattractant for fibroblasts, smooth muscle cells, glial cells, monocytes and neutrophils. Functional PDGF is secreted in disulfide linked, homodimeric or heterodimeric forms comprised of A or B chains (PDGFAA, PDGF-BB or PDGF-AB). Binding of divalent PDGF induces receptor dimerization with three possible forms: αα, αβ, ββ. The PDGFRα subunit binds both PDGF A and B chains, whereas the PDGFRβ subunit binds only PDGF B chains. Although both receptor subunits can stimulate mitogenic responses, only the β subunit can induce chemotaxis. The αR1 antibody is specific for PDGFRα and does not crossreact with PDGFRβ. It immunoprecipitates human, monkey, rabbit, pig, dog and cat PDGFRα. It does not recognize hamster, rat or mouse PDGFRα.

The antibody was conjugated to BD Horizon™ BV421 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. With an Ex Max of 407-nm and Em Max at 421-nm, BD Horizon™ BV421 can be excited by the violet laser and detected in the standard Pacific Blue™ filter set (eg, 450/50-nm filter). BD Horizon™ BV421 conjugates are very bright, often exhibiting a 10 fold improvement in brightness compared to Pacific Blue™ conjugates.



Flow cytometric analysis of CD140a expression on the human MG-63 cell line. *Human MG-63 cells were stained with either BD Horizon™ BV421 Mouse Anti-Human CD140a antibody (Cat. No. 562799; solid line histogram) or BD Horizon™ BV421 Mouse mIgG2a, κ Isotype Control (Cat. No. 562439; dashed line histogram). The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of viable cells. Flow cytometry was performed using a BD LSR™ II Flow Cytometry System.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with BD Horizon™ BV421 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV421 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
562439	BV421 Mouse IgG2a, k Isotype Control	50 µg	G155-178

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
5. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
7. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
8. Brilliant Violet™ 421 is a trademark of Sirigen.

References

Callard R, Gearing A. Callard R, Gearing A. *The Cytokine Facts Book.* San Diego: Academic Press; 1994. (Biology)

Bazenet CE, Kazlauskas A. The PDGF receptor alpha subunit activates p21ras and triggers DNA synthesis without interacting with rasGAP. *Oncogene.* 1993; 9(2):517-525. (Biology)

LaRochelle WJ, Jensen RA, Heidaran MA, et al. Inhibition of platelet-derived growth factor autocrine growth stimulation by a monoclonal antibody to the human alpha platelet-derived growth factor receptor. *Cell Growth Differ.* 1993; 4(7):547-553. (Clone-specific: Flow cytometry, Functional assay, Immunoprecipitation)

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