BB515 Mouse Anti-Human CD140a

**Product Information**

**Material Number:** 564594

**Alternate Name:** PDGF Receptor α; PDGFRα; PDGF-R-alpha; PDGFR2; PGFRA; RHEPDGFRα

**Size:** 50 Tests

**Vol. per Test:** 5 µl

**Clone:** αR1 (also known as Alpha-R1)

**Immunogen:** Human PDGFRα Transfected Cell Line

**Isotype:** Mouse (BALB/c) IgG2a, κ

**Reactivity:** QC Testing: Human

**Workshop:** VI E031, BP229

**Storage Buffer:** Aqueous buffered solution containing ≤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 chemotactant 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 divergent 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 BB515 which is part of the BD Horizon Brilliant™ Blue family of dyes. With an Ex Max near 490 nm and an Em Max near 515 nm, BD Horizon BB515 can be excited by the blue laser (488 nm) laser and detected with a 530/30 nm filter. Although this dye has been exclusively developed by BD Biosciences and is up to seven times brighter than FITC with less spillover into the PE channel. Due to similar excitation and emission properties, BB515, FITC, and Alexa Fluor® 488 cannot be used simultaneously. It is not recommended to use BB515 in cocktails that include Streptavidin conjugates as it may cause high background.

**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™ BB515 under optimum conditions and unconjugated antibody was removed.

**Flow cytometric analysis of CD140a expression on the human MG-63 cell line.** Cells from the human MG-63 (Osteosarcoma, ATCC CRL-1427) cell line were stained with either BB515 Mouse IgG2a, κ isotype Control (Cat. No. 564515; dashed line histogram) or BB515 Mouse Anti-Human CD140a (Cat. No. 564594/566055; solid line histogram). The fluorescence histogram showing CD140a expression (or Ig isotype control staining) was derived from gated events with the forward and side light-scattering characteristics of viable human MG-63 cells. Flow cytometric analysis was performed on a BD LSR™ II.

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564594 Rev. 4
**Recommended Assay Procedure:**

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and CompBead to ensure that BD Comp beads are appropriate for your specific cellular application.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

For optimal results, it is recommended to perform 2 washes after staining with antibodies. Cells may be prepared, stained with antibodies and washed twice with wash buffer per established protocols for immunofluorescence staining, prior to acquisition on a flow cytometer. Performing fewer than the recommended wash steps may lead to increased spread of the negative population.

**Suggested Companion Products**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
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<tr>
<td>564515</td>
<td>BB515 Mouse IgG2a, κ Isotype Control</td>
<td>50 µg</td>
<td>G155-178</td>
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<td>563794</td>
<td>Brilliant Stain Buffer</td>
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<td>554656</td>
<td>Stain Buffer (FBS)</td>
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<td>554657</td>
<td>Stain Buffer (BSA)</td>
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<td>566055</td>
<td>BB515 Mouse Anti-Human CD140a</td>
<td>25 Tests</td>
<td>αR1</td>
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<tr>
<td>566349</td>
<td>Brilliant Stain Buffer</td>
<td>1000 Tests</td>
<td>(none)</td>
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<tr>
<td>566385</td>
<td>Brilliant Stain Buffer Plus</td>
<td>1000 Tests</td>
<td>(none)</td>
</tr>
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</table>

**Product Notices**

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use $1 \times 10^6$ cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. 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.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
6. Please refer to www.regdocs.bd.com to access safety data sheets (SDS).

**References**


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)


