Technical Data Sheet

Purified Mouse Anti-Human CD140a

Product Information

Material Number: 556001
Alternate Name: PDGF Receptor α; PDGFRA; PDGFRα; PDGF-R-alpha; PDGFR2; PGFRA; RHEPDGFRA
Size: 0.1 mg
Concentration: 0.5 mg/ml
Clone: αR1 (also known as Alpha-R1)
Immunogen: Human PDGFRα Transfected Cell Line
Isotype: Mouse (BALB/c) IgG2a, κ
Reactivity: QC Testing: Human
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 (PDGFRA), also known as CD140α. CD140α 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.

Preparation and Storage

Store undiluted at 4°C.
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

<table>
<thead>
<tr>
<th>Flow cytometry</th>
<th>Routinely Tested</th>
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<tr>
<td>Functional assay</td>
<td>Reported</td>
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<tr>
<td>Immunoprecipitation</td>
<td>Reported</td>
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Flow cytometric analysis of MG-63 (osteosarcoma cell line) cells. MG-63 cells were stained with Purified Mouse Anti-Human CD140a (Cat. No. 556001; solid line histogram) or Purified Mouse IgG2a, κ Isotype Control (Cat. No. 555571; dashed line histogram), then FITC Goat Anti-Mouse IgG/IgM (Cat. No. 555988). The fluorescence histograms were derived from gated events with the forward and side light-scattering characteristics of viable MG-63 cells.
### Suggested Companion Products

<table>
<thead>
<tr>
<th>Catalog Number</th>
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<th>Size</th>
<th>Clone</th>
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<tbody>
<tr>
<td>555571</td>
<td>Purified Mouse IgG2a, κ Isotype Control</td>
<td>0.1 mg</td>
<td>G155-178</td>
</tr>
<tr>
<td>555988</td>
<td>FITC Goat Anti-Mouse IgG/IgM</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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<td>554656</td>
<td>Stain Buffer (FBS)</td>
<td>500 mL</td>
<td>(none)</td>
</tr>
<tr>
<td>554657</td>
<td>Stain Buffer (BSA)</td>
<td>500 mL</td>
<td>(none)</td>
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### Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
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. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.

### 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)