Technical Data Sheet

Alexa Fluor® 647 Rat Anti-Human CD115 (CSF-1R)

Product Information

Material Number: 564945
Alternate Name: CSF-1R; CSF1R; C-FMS; FMS; FIM2; M-CSF-R
Size: 100 Tests
Vol. per Test: 5 µl/test
Clone: 9-4D2-1E4 (also known as 9-4D2)
Immunogen: Human CD115 Transfected Cell Line
Isotype: Rat IgG1, κ
QC Testing: Human
Workshop: V MA199
Storage Buffer: Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 9-4D2-1E4 monoclonal antibody specifically binds to CD115 which is also known as Colony stimulating factor 1 receptor (CSF-1R) or Macrophage colony-stimulating factor 1 receptor (M-CSFR). This type I transmembrane glycoprotein is a receptor tyrosine kinase (RTK) that belongs to the Ig superfamily. It is expressed on a variety of cells including those committed to the mononuclear phagocyte lineage, such as, monocytes, macrophages, and osteoclasts. CSF-1 binds to and signals through CSF-1R homodimers which undergo tyrosine autophosphorylation and transduce downstream signaling pathways resulting in cytoskeletal reorganization and gene expression. CSF-1R activation stimulates the proliferation, differentiation, and survival of cells within the mononuclear phagocyte system. Acting through CD115, CSF-1 induces macrophage spreading and motility, and in combination with RANKL, CSF-1 drives the differentiation of mononuclear phagocytes to become osteoclasts. Interleukin-34 (IL-34) is another ligand for CD115 that can induce similar, as well as, some different biological responses by CD115-positive target cells.

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 to Alexa Fluor® 647 under optimum conditions, and unreacted Alexa Fluor® 647 was removed.

Two-parameter flow cytometric analysis of CD115 (CSF-1R) expression on human peripheral blood leucocytes. Whole blood cells were stained with either Alexa Fluor® 647 Rat IgG1, κ Isotype Control (Cat. No. 557731; left panel) or Alexa Fluor® 647 Rat Anti-Human CD115 (CSF-1R) (Cat. No. 564945; right panel). The erythrocytes were lysed with Lysing Buffer (Cat. No. 555899). Two-parameter flow cytometric contour plots showing the correlated expression of CD115 (CSF-1R) [or Ig Isotype control staining] versus Side Light Scatter (SSC) characteristics were derived from gated events with the forward and side light-scattering characteristics of viable leucocytes. Flow cytometric analysis was performed on a BD FACSCanto™ II.
Application Notes

Application

Flow cytometry Routinely Tested

Recommended Assay Procedure:
Please note that immunofluorescent staining of human CD115 is temperature sensitive. Staining performed at 4°C gives much stronger immunofluorescent staining intensities upon flow cytometric analysis.

Suggested Companion Products

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<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
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<tbody>
<tr>
<td>554656</td>
<td>Stain Buffer (FBS)</td>
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<tr>
<td>554657</td>
<td>Stain Buffer (BSA)</td>
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<tr>
<td>555899</td>
<td>Lysing Buffer</td>
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<tr>
<td>557731</td>
<td>Alexa Fluor® 647 Rat IgG1, κ Isotype Control</td>
<td>0.1 mg</td>
<td>R3-34</td>
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<td>349202</td>
<td>BD FACSTM Lysing Solution</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. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. 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.
5. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
6. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).

References

Li W, Stanley ER. Role of dimerization and modification of the CSF-1 receptor in its activation and internalization during the CSF-1 response. EMBO J. 1991; 10(2):277-288. (Biology)