SANTA CRUZ BIOTECHNOLOGY, INC.

GM-CSFRα (S-20): sc-458

BACKGROUND

The human IL-3, IL-5 and GM-CSF receptors are each composed of both unique α subunits and a common β subunit. The α subunits are low-affinity ligand binding proteins while the β subunits do not themselves bind ligand, but are required for high-affinity binding by the α subunits. In contrast, the mouse IL-3 receptor has two distinct β subunits, one that functions only in IL-3 medi-ated cell signaling and a second that is shared with IL-5 and GM-CSF. The murine β subunits are 91% homologous at the amino acid level but only 56% homologous to the human β subunit. Although neither the murine nor the human β subunit contains tyrosine kinase domains, both activate tyrosine phosphorylation mediated signaling pathways.

CHROMOSOMAL LOCATION

Genetic locus: CSF2RAX (human) mapping to Xp22.32/Yp11.3.

SOURCE

GM-CSFRα (S-20) is a mouse monoclonal antibody raised against GM-CSFRα transfected cells of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as fluorescein (sc-458 FITC) or phycoerythrin (sc-458 PE) conjugates for flow cytometry, 100 tests.

Available azide-free for neutralization of human native GM-CSFRα, sc-458 L, 100 µg/0.1 ml.

APPLICATIONS

GM-CSFRα (S-20) is recommended for detection of GM-CSFRα of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for GM-CSFRα siRNA (h): sc-35501, GM-CSFRα shRNA Plasmid (h): sc-35501-SH and GM-CSFRα shRNA (h) Lentiviral Particles: sc-35501-V.

Molecular Weight of GM-CSFRα: 80 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

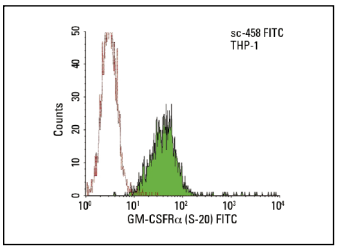
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



GM-CSFRα (S-20) FITC: sc-458 FITC. FCM analysis of human peripheral blood leukocytes. Black line histogram represents the isotype control, normal mouse IgG_{2a}: sc-2856.

SELECT PRODUCT CITATIONS

1. Itoh, T., et al. 1998. Definition of the role of tyrosine residues of the common β subunit regulating multiple signaling pathways of granulocyte-macrophage colony-stimulating factor receptor. Mol. Cell. Biol. 18: 742-752.
2. Anders, R.A., et al. 1998. Differential requirement for type I and type II transforming growth factor β receptor kinase activity in ligand-mediated receptor endocytosis. J. Biol. Chem. 273: 23118-23125.
3. Moon, J.J. and Nelson, B.H. 2001. Phosphatidylinositol 3-kinase potentiates, but does not trigger, T cell proliferation mediated by the IL-2 receptor. J. Immunol. 167: 2714-2723.
4. Dhar-Mascareno, M., et al. 2003. Granulocyte-macrophage colony-stimulating factor signals for increased glucose transport via phosphatidylinositol 3-kinase- and hydrogen peroxide-dependent mechanisms. J. Biol. Chem. 278: 11107-11114.
5. Nelson, B.H., et al. 2003. Uncoupling of promitogenic and antiapoptotic functions of IL-2 by Smad-dependent TGF-β signaling. J. Immunol. 170: 5563-5570.
6. Giron-Michel, J., et al. 2003. Differential STAT3, STAT5, and NFκB activation in human hematopoietic progenitors by endogenous interleukin-15: implications in the expression of functional molecules. Blood 102: 109-117.
7. Moon, J.J., et al. 2004. A permissive role for phosphatidylinositol 3-kinase in the Stat5-mediated expression of cyclin D2 by the interleukin-2 receptor. J. Biol. Chem. 279: 5520-5527.
8. Giron-Michel, J., et al. 2005. Membrane-bound and soluble IL-15/IL-15Rα complexes display differential signaling and functions on human hematopoietic progenitors. Blood 106: 2302-2310.
9. Murphy, S.J., et al. 2007. A unique element in the cytoplasmic tail of the type II transforming growth factor-β receptor controls basolateral delivery. Mol. Biol. Cell 18: 3788-3799.