SANTA CRUZ BIOTECHNOLOGY, INC.

IL-3Rα (5B11): sc-18878

BACKGROUND

The human IL-3, IL-5 and GM-CSF receptors are each composed of both unique α subunits and a common 130 kDa 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 mediated 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.

REFERENCES

1. Hayashida, K., et al. 1990. Molecular cloning of a second subunit of the receptor for human granulocyte-macrophage colony-stimulating factor (GM-CSF): reconstitution of a high affinity GM-CSF receptor. Proc. Natl. Acad. Sci. USA 87: 9655-9659.
2. Tavernier, J., et al. 1992. A human high affinity interleukin-5 receptor (IL-5R) is composed of an IL-5 specific chain and a β chain shared with the receptor for GM-CSF. Cell 66: 1175-1184.
3. Hara, T., et al. 1992. Two distinct functional receptors for mouse interleukin-3. EMBO J. 11: 1875-1884.
4. Sakamaki, K., et al. 1992. Critical cytoplasmic domains of the common β subunit of the human GM-CSF, IL-3, and IL-5 receptors for growth signal transduction and tyrosine phosphorylation. EMBO J. 11: 3541-3549.
5. Park, L.S., et al. 1992. Cloning of the low-affinity murine granulocyte-macrophage colony-stimulating factor receptor and reconstitution of a high-affinity receptor complex. Proc. Natl. Acad. Sci. USA 89: 4295-4299.
6. Miyajima, A., et al. 1992. Cytokine receptors and signal transduction. Ann. Rev. Immunol. 10: 295-331.
7. Goodall, G.J., et al. 1993. A model for the interaction of the GM-CSF, IL-3 and IL-5 receptors with their ligands. Growth Factors 8: 87-97.
8. Rao, P., et al. 1995. Human IL-3 receptor signaling: rapid induction of phosphatidylcholine hydrolysis is independent of protein kinase C but dependent on tyrosine phosphorylation in transfected NIH 3T3 cells. J. Immunol. 154: 1664-1674.

CHROMOSOMAL LOCATION

Genetic locus: Il3ra (mouse) mapping to 14 A2.

SOURCE

IL-3Rα (5B11) is a rat monoclonal antibody epitope mapping within the alpha chain subunit if IL-3Rα of mouse origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-3Rα (5B11) is available conjugated to either phycoerythrin (sc-18878 PE) or fluorescein (sc-18878 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

IL-3Rα (5B11) is recommended for detection of IL-3Rα of mouse origin by 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 IL-3Rα siRNA (m): sc-35660, IL-3Rα shRNA Plasmid (m): sc-35660-SH and IL-3Rα shRNA (m) Lentiviral Particles: sc-35660-V.

Molecular Weight of IL-3Rα: 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-rat IgG-FITC: sc-2011 (dilution range: 1:100-1:400) or goat anti-rat IgG-TR: sc-2782 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

CONJUGATES

See **IL-3Rα (C-5): sc-74522** for IL-3Rα antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.