SANTA CRUZ BIOTECHNOLOGY, INC.

# IL-3Rα (C-5): sc-74522

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Interleukin-3, or IL-3, is a pleiotropic cytokine that is primarily secreted by activated T lymphocytes and stimulates the proliferation and differentiation of hematopoietic cells. IL-3 exerts its biological effects through a receptor which consists of a ligand-specific α subunit (IL-3Rα) and a signal transducing β subunit (IL-3Rβ) common to the IL-3/IL-5/GM-CSF receptors. 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. 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. The carboxy-terminus of the β subunit has been shown to be necessary for activation of the MAP kinase signaling pathway. Although the IL-3 receptor has no intrinsic kinase activity, stimulation with IL-3 leads to tyrosine phosphorylation of the JAK/Tyk 2 family member, JAK2, which in turn activates and causes nuclear translocation of Stat5a and Stat5b.

## 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.


## CHROMOSOMAL LOCATION

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

## SOURCE

IL-3Rα (C-5) is a mouse monoclonal antibody raised against amino acids 17-210 mapping within an N-terminal extracellular domain of IL-3Rα of mouse origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-3Rα (C-5) is available conjugated to agarose (sc-74522 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74522 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74522 PE), fluorescein (sc-74522 FITC), Alexa Fluor® 488 (sc-74522 AF488), Alexa Fluor® 546 (sc-74522 AF546), Alexa Fluor® 594 (sc-74522 AF594) or Alexa Fluor® 647 (sc-74522 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74522 AF680) or Alexa Fluor® 790 (sc-74522 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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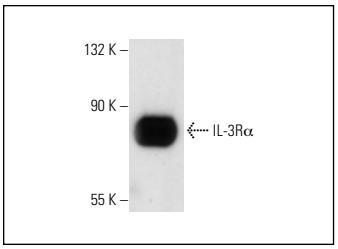
## APPLICATIONS

IL-3Rα (C-5) is recommended for detection of IL-3Rα of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

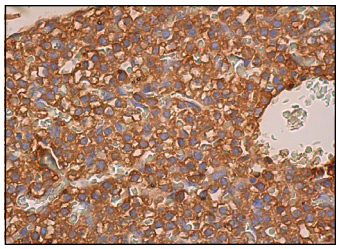
Suitable for use as control antibody for IL-3Rα siRNA (m): sc-35660, IL-3Rα shRNA Plasmid (m): sc-35660-SH and IL-3Rα shRNA (m) Lentiviral Particles: sc-35660-V.

Molecular Weight of IL-3Rα: 70 kDa.

## DATA




IL-3Rα (C-5): sc-74522. Western blot analysis of mouse recombinant IL-3Rα.



IL-3Rα (C-5): sc-74522. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse embryonic liver tissue showing membrane and cytoplasmic staining of hepatocytes.

## SELECT PRODUCT CITATIONS


1. Lim, J.C., et al. 2016. Neuronal release of cytokine IL-3 triggered by mechanosensitive autostimulation of the P2X7 receptor is neuroprotective. Front. Cell. Neurosci. 10: 270.
2. Tong, Y., et al. 2020. The RNFT2/IL-3Rα axis regulates IL-3 signaling and innate immunity. JCI Insight 5: 133652.
3. Zhang, W., et al. 2024. Nanotherapeutic approaches of interleukin-3 to clear the α-synuclein pathology in mouse models of Parkinson's disease. Adv. Sci. E-published.


## 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.

## PROTOCOLS

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