

# IL-3/IL-5/GM-CSFR $\beta$ (C-4): sc-376582

## BACKGROUND

The human IL-3, IL-5 and GM-CSF receptors are each composed of both unique  $\alpha$  subunits and  $\alpha$  common  $\beta$  subunit. The  $\alpha$  subunits are low affinity ligand binding proteins while the  $\beta$  subunits do not themselves bind ligand, but are required for high affinity binding by the  $\alpha$  subunits. In contrast, the mouse IL-3 receptor has two distinct  $\beta$  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  $\beta$  subunits are 91% homologous at the amino acid level but only 56% homologous to the human  $\beta$  subunit. Although neither the murine nor the human  $\beta$  subunit contains tyrosine kinase domains, both activate tyrosine phosphorylation mediated signaling pathways.

## REFERENCES

- 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.
- Tavernier, J., et al. 1991. A human high affinity interleukin-5 receptor (IL-5R) is composed of an IL-5 specific chain and a  $\beta$  chain shared with the receptor for GM-CSF. Cell 66: 1175-1184.
- 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.
- Miyajima, A., et al. 1992. Cytokine receptors and signal transduction. Annu. Rev. Immunol. 10: 295-331.
- Hara, T., et al. 1992. Two distinct functional receptors for mouse interleukin-3. EMBO J. 11: 1875-1884.
- Sakamaki, K., et al. 1992. Critical cytoplasmic domains of the common  $\beta$  subunit of the human GM-CSF, IL-3, and IL-5 receptors for growth signal transduction and tyrosine phosphorylation. EMBO J. 11: 3541-3549.
- 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.

## CHROMOSOMAL LOCATION

Genetic locus: CSF2RB (human) mapping to 22q12.3.

## SOURCE

IL-3/IL-5/GM-CSFR $\beta$  (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 869-897 at the C-terminus of IL-3/IL-5/GM-CSFR $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376582 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

IL-3/IL-5/GM-CSFR $\beta$  (C-4) is recommended for detection of IL-3/IL-5/GM-CSFR $\beta$  of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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-3/IL-5/GM-CSFR $\beta$  siRNA (h): sc-35658, IL-3/IL-5/GM-CSFR $\beta$  shRNA Plasmid (h): sc-35658-SH and IL-3/IL-5/GM-CSFR $\beta$  shRNA (h) Lentiviral Particles: sc-35658-V.

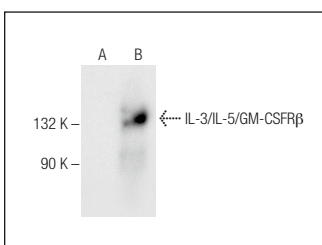
Molecular Weight of IL-3/IL-5/GM-CSFR $\beta$ : 130 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HuT 78 whole cell lysate: sc-2208 or IL-3/IL-5/GM-CSFR $\beta$  (h): 293T Lysate: sc-128879.

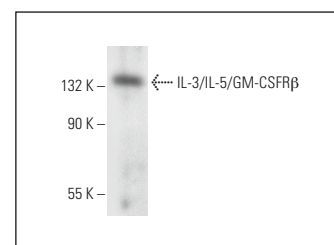
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



IL-3/IL-5/GM-CSFR $\beta$  (C-4): sc-376582. Western blot analysis of IL-3/IL-5/GM-CSFR $\beta$  expression in non-transfected: sc-117752 (A) and human IL-3/IL-5/GM-CSFR $\beta$  transfected: sc-128879 (B) 293T whole cell lysates.



IL-3/IL-5/GM-CSFR $\beta$  (C-4): sc-376582. Western blot analysis of IL-3/IL-5/GM-CSFR $\beta$  expression in HuT 78 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Chuang, L.S., et al. 2016. A frameshift in CSF2RB predominant among Ashkenazi Jews increases risk for Crohn's disease and reduces monocyte signaling via GM-CSF. Gastroenterology 151: 710-723.e2.

## 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.