

# GM-CSFR $\alpha$ (C-18): sc-690

## BACKGROUND

The human IL-3, IL-5 and GM-CSF receptors are each composed of both unique  $\alpha$  subunits and a 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. 1992. 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.

## CHROMOSOMAL LOCATION

Genetic locus: CSF2RA (human) mapping to Xp22.33/Yp11.32.

## SOURCE

GM-CSFR $\alpha$  (C-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of GM-CSFR $\alpha$  of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-690 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GM-CSFR $\alpha$  (C-18) is recommended for detection of GM-CSFR $\alpha$  of human origin by Western Blotting (starting dilution 1:200, 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), 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 GM-CSFR $\alpha$  siRNA (h): sc-35501, GM-CSFR $\alpha$  shRNA Plasmid (h): sc-35501-SH and GM-CSFR $\alpha$  shRNA (h) Lentiviral Particles: sc-35501-V.

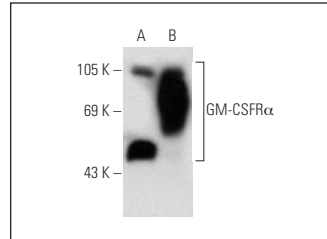
Molecular Weight of GM-CSFR $\alpha$ : 80 kDa.

Positive Controls: GM-CSFR $\alpha$  (h): 293T Lysate: sc-159381, human peripheral blood leukocyte lysate: sc-363771 or HL-60 + DMSO cell lysate: sc-24703.

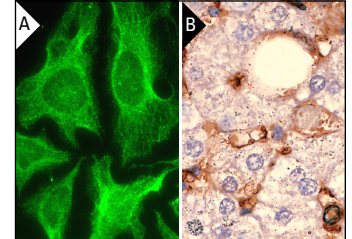
## STORAGE

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

## DATA



GM-CSFR $\alpha$  (C-18): sc-690. Western blot analysis of GM-CSFR $\alpha$  expression in non-transfected: sc-117752 (A) and human GM-CSFR $\alpha$  transfected: sc-159381 (B) 293T whole cell lysates.



GM-CSFR $\alpha$  (C-18): sc-690. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver showing membrane localization (B).

## SELECT PRODUCT CITATIONS

- Chang, W., et al. 1998. Stoichiometric structure-function analysis of the prolactin receptor signaling domain by receptor chimeras. Mol. Cell. Biol. 18: 896-905.
- Chen, J., et al. 2003. The laminin receptor modulates granulocyte-macrophage colony-stimulating factor receptor complex formation and modulates its signaling. Proc. Natl. Acad. Sci. USA 100: 14000-14005.
- DeYulia, G.J., Jr., et al. 2005. Hydrogen peroxide generated extracellularly by receptor-ligand interaction facilitates cell signaling. Proc. Natl. Acad. Sci. USA 102: 5044-5049.
- Chen, J., et al. 2006. The  $\alpha$  subunit of the granulocyte-macrophage colony-stimulating factor receptor interacts with c-Kit and inhibits c-Kit signaling. J. Biol. Chem. 281: 22421-22426.
- Galkowska, H., et al. 2006. Chemokines, cytokines, and growth factors in keratinocytes and dermal endothelial cells in the margin of chronic diabetic foot ulcers. Wound Repair Regen. 14: 558-565.
- Schweizerhof, M., et al. 2009. Hematopoietic colony-stimulating factors mediate tumor-nerve interactions and bone cancer pain. Nat. Med. 15: 802-807.
- Ridwan, S., et al. 2012. Distribution of granulocyte-monocyte colony-stimulating factor and its receptor  $\alpha$ -subunit in the adult human brain with specific reference to Alzheimer's disease. J. Neural Transm. 119: 1389-1406.

## RESEARCH USE

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



Try **GM-CSFR $\alpha$  (S-50): sc-456** or **GM-CSFR $\alpha$  (8D10): sc-21762**, our highly recommended monoclonal alternatives to GM-CSFR $\alpha$  (C-18).