

# IL-6R $\alpha$ (H-7): sc-373708

## BACKGROUND

IL-6 activates intracellular signaling through binding a receptor consisting of a ligand-binding protein (IL-6R $\alpha$ ) and a second protein. IL-6 first binds to IL-6R $\alpha$  (also known as gp80), which subsequently associates with a gp130 dimer. The active signaling complex consists of, at minimum, IL-6, IL-6R $\alpha$  and a dimer of two gp130 proteins that are linked by a disulfide bond. A soluble form of IL-6R $\alpha$ , namely sIL-6R $\alpha$ , is generated by proteolytic cleavage of the membrane-bound precursor and can function as an agonistic molecule that can actively participate in cell-to-cell signaling. The second subunit of the IL-6 complex, gp130, also functions as a component of several additional receptor complexes, including leukemia inhibitory factor (LIF), oncostatin M (OSM), ciliary neurotrophic factor (CNTF) and IL-11. LIF binds to the LIF receptor with low affinity and to a complex of the LIF receptor and gp130 with high affinity, while OSM appears to bind to gp130 with low affinity and to a complex of gp130 and the LIF receptor with high affinity.

## REFERENCES

1. Yamasaki, K., et al. 1988. Cloning and expression of the human interleukin-6 (BSF-2/IFN- $\beta$ 2) receptor. *Science* 241: 825-828.
2. Taga, T., et al. 1989. Interleukin-6 triggers the association of its receptor with a possible signal transducer, gp130. *Cell* 58: 573-581.
3. Hibi, M., et al. 1990. Molecular cloning and expression of an IL-6 signal transducer, gp130. *Cell* 63: 1149-1157.

## CHROMOSOMAL LOCATION

Genetic locus: IL6R (human) mapping to 1q21.3; Il6ra (mouse) mapping to 3 F1.

## SOURCE

IL-6R $\alpha$  (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 441-468 at the C-terminus of IL-6R $\alpha$  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.

IL-6R $\alpha$  (H-7) is available conjugated to agarose (sc-373708 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373708 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373708 PE), fluorescein (sc-373708 FITC), Alexa Fluor<sup>®</sup> 488 (sc-373708 AF488), Alexa Fluor<sup>®</sup> 546 (sc-373708 AF546), Alexa Fluor<sup>®</sup> 594 (sc-373708 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-373708 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-373708 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-373708 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373708 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## RESEARCH USE

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

## APPLICATIONS

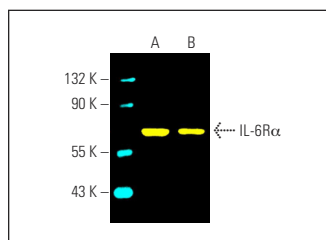
IL-6R $\alpha$  (H-7) is recommended for detection of IL-6R $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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-6R $\alpha$  siRNA (h): sc-35663, IL-6R $\alpha$  siRNA (m): sc-40065, IL-6R $\alpha$  shRNA Plasmid (h): sc-35663-SH, IL-6R $\alpha$  shRNA Plasmid (m): sc-40065-SH, IL-6R $\alpha$  shRNA (h) Lentiviral Particles: sc-35663-V and IL-6R $\alpha$  shRNA (m) Lentiviral Particles: sc-40065-V.

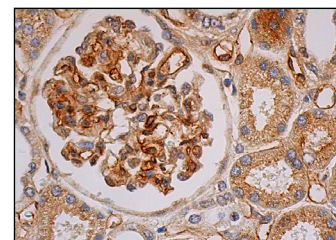
Molecular Weight of IL-6R $\alpha$ : 80 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, Jurkat whole cell lysate: sc-2204 or SUP-T1 whole cell lysate: sc-364796.

## DATA



IL-6R $\alpha$  (H-7) Alexa Fluor<sup>®</sup> 488: sc-373708 AF488. Direct fluorescent western blot analysis of IL-6R $\alpha$  expression in Jurkat (A) and SUP-T1 (B) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Cruz Marker<sup>™</sup> Molecular Weight Standards detected with Cruz Marker<sup>™</sup> MW Tag-Alexa Fluor<sup>®</sup> 647: sc-516791.



IL-6R $\alpha$  (H-7): sc-373708. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and cells in tubules and membrane and cytoplasmic staining of endothelial cells.

## SELECT PRODUCT CITATIONS

1. Aromolaran, A.S., et al. 2018. Interleukin-6 inhibition of hERG underlies risk for acquired long QT in cardiac and systemic inflammation. *PLoS ONE* 13: e0208321.
2. Khatib, A., et al. 2020. The glutathione peroxidase 8 (GPX8)/IL-6/Stat3 axis is essential in maintaining an aggressive breast cancer phenotype. *Proc. Natl. Acad. Sci. USA* 117: 21420-21431.
3. Huang, S.L., et al. 2021. TLR4/IL-6/IRF1 signaling regulates androgen receptor expression: a potential therapeutic target to overcome taxol resistance in ovarian cancer. *Biochem. Pharmacol.* 186: 114456.
4. Robinson, R., et al. 2022. Generation and characterization of a Müller-glial-cell-specific Il6ra knockout mouse to delineate the effects of IL-6 *trans*-signaling in the retina. *Sci. Rep.* 12: 17626.

## STORAGE

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