

# IL-12B p40 (F-10): sc-365389

## BACKGROUND

The interleukins (ILs) are a broad family of well characterized cytokines, primarily of hematopoietic cell origin. ILs are secreted by immune cells (mainly macrophages, B cells or T cells) that regulate a wide range of immune system functions. The functions of different ILs vary from regulating inflammatory and immune responses, functioning as an autocrine factor and regulating and/or inhibiting other ILs. IL-12 is responsible for the differentiation of naive CD4<sup>+</sup> T cells into type 1 helper T cells that produce interferon- $\gamma$  (IFN- $\gamma$ ). It also activates production of tumor necrosis factor  $\alpha$  (TNF $\alpha$ ) from T and natural killer (NK) cells. IL-12 is a heterodimer composed of subunits IL-12A p35 and IL-12B p40. The p40 subunit of IL-12 also combines with p19, a protein that shows no biological activity by itself, to form a biologically active, composite cytokine, IL-23. IL-23 shares some *in vivo* functions with IL-12, including activation of the transcription factor Stat4 and IFN- $\gamma$  production and proliferation in PHA blast T cells, as well as in CD45RO (memory) T cells.

## CHROMOSOMAL LOCATION

Genetic locus: IL12B (human) mapping to 5q33.3; Il12b (mouse) mapping to 11 B1.1.

## SOURCE

IL-12B p40 (F-10) is a mouse monoclonal antibody raised against amino acids 23-328 of IL-12B p40 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-12B p40 (F-10) is available conjugated to agarose (sc-365389 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365389 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365389 PE), fluorescein (sc-365389 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365389 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365389 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365389 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365389 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365389 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365389 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

IL-12B p40 (F-10) is recommended for detection of IL-12B p40 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

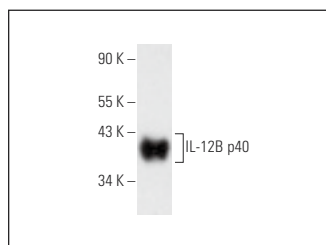
Suitable for use as control antibody for IL-12B p40 siRNA (h): sc-39640, IL-12B p40 siRNA (m): sc-39641, IL-12B p40 shRNA Plasmid (h): sc-39640-SH, IL-12B p40 shRNA Plasmid (m): sc-39641-SH, IL-12B p40 shRNA (h) Lentiviral Particles: sc-39640-V and IL-12B p40 shRNA (m) Lentiviral Particles: sc-39641-V.

Molecular Weight of IL-12B p40: 40 kDa.

## 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-12B p40 (F-10): sc-365389. Western blot analysis of mouse full length recombinant IL-12B p40.

## SELECT PRODUCT CITATIONS

1. Mali, A.S. and Novotny, J. 2022. Opioid receptor activation suppresses the neuroinflammatory response by promoting microglial M2 polarization. *Mol. Cell. Neurosci.* 121: 103744.
2. Banerjee, S., et al. 2022. *Leishmania donovani* infection induce extracellular signal-regulated kinase 1/2 (ERK1/2) mediated lipid droplet generation in macrophages. *Mol. Immunol.* 141: 328-337.
3. Zhang, N., et al. 2022. Construction of an IL-12 and CXCL11 armed oncolytic herpes simplex virus using the CRISPR/Cas9 system for colon cancer treatment. *Virus Res.* 323: 198979.
4. Huang, Z., et al. 2023. Integrated analyses of single-cell transcriptomics identify metastasis-associated myeloid subpopulations in breast cancer lung metastasis. *Front. Immunol.* 14: 1180402.

## 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](http://www.scbt.com) for detailed protocols and support products.