SANTA CRUZ BIOTECHNOLOGY, INC.

IL-12B p40 (C17.8): sc-57258

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 $CD4^+$ T cells into type 1 helper T cells that produce interferon-γ (IFN-γ). It also activates production of tumor necrosis factor α (TNFα) 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-γ production and proliferation in PHA blast T cells, as well as in CD45RO (memory) T cells.

REFERENCES

1. Oppmann, B., et al. 2000. Novel p19 protein engages IL-12p40 to form a cytokine, IL-23, with biological activities similar as well as distinct from IL-12. Immunity 13: 715-725.
2. Wiekowski, M.T., et al. 2001. Ubiquitous transgenic expression of the IL-23 subunit p19 induces multiorgan inflammation, runting, infertility, and premature death. J. Immunol. 166: 7563-7570.

CHROMOSOMAL LOCATION

Genetic locus: Il12a (mouse) mapping to 3 E1.

SOURCE

IL-12B p40 (C17.8) is a rat monoclonal antibody raised against full length IL-12B p40 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for neutralization studies, sc-57258 L, 200 µg/0.1 ml.

APPLICATIONS

IL-12B p40 (C17.8) is recommended for detection of IL-12B p40 of mouse origin by Western Blotting (starting dilution 1:200, 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); also recommended for detection of IL-12/IL-23 p40 subunit (monomer, homodimer and heterodimer IL-12 p35/p40 or IL-23 p19/p40).

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

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

STORAGE

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

SELECT PRODUCT CITATIONS

1. Bang, M.A., et al. 2015. *Bacillus subtilis* KCTC 11782BP-produced alginate oligosaccharide effectively suppresses asthma via T-helper cell type 2-related cytokines. PLoS ONE 10: e0117524.
2. Seo, J.H., et al. 2016. *Erythronium japonicum* attenuates histopathological lung abnormalities in a mouse model of ovalbumin-induced asthma. Int. J. Mol. Med. 37: 1221-1228.
3. Lee, S.Y., et al. 2017. *Opuntia humifusa* modulates morphological changes characteristic of asthma via IL-4 and IL-13 in an asthma murine model. Food Nutr. Res. 61: 1393307.
4. Lee, S.Y., et al. 2018. *Mycoleptodonoides aitchisonii* suppresses asthma via Th2 and Th1 cell regulation in an ovalbumin-induced asthma mouse model. Mol. Med. Rep. 17: 11-20.
5. Lee, S.Y., et al. 2018. *Camellia japonica* oil suppressed asthma occurrence via GATA-3 & IL-4 pathway and its effective and major component is oleic acid. Phytomedicine 57: 84-94.
6. Bok, S.H., et al. 2019. *Allium hookeri* root extract regulates asthmatic changes through immunological modulation of Th1/Th2-related factors in an ovalbumin-induced asthma mouse model. Mol. Med. Rep. 20: 3215-3223.
7. Lee, S.Y., et al. 2019. Macmoondongtang modulates Th1-/Th2-related cytokines and alleviates asthma in a murine model. PLoS ONE 14: e0224517.
8. Bonfiglio, R., et al. 2021. Extensive histopathological characterization of inflamed bowel in the dextran sulfate sodium mouse model with emphasis on clinically relevant biomarkers and targets for drug development. Int. J. Mol. Sci. 22: 2028.
9. Kasala, D., et al. 2022. Bioreducible polymer-mediated delivery of oncolytic adenovirus can attenuate antiviral immune response and concurrently enhance the induction of antitumor immune response to effectively prevent metastasis. Biomater. Sci. 10: 4293-4308.

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.