SANTA CRUZ BIOTECHNOLOGY, INC.

IL-23 (D-12): sc-271349

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The p19 protein shares sequence similarity with IL-6 subfamily members and is distantly related to the p35 subunit of IL-12. p19 shows no biological activity by itself; instead, it combines with the p40 subunit of IL-12 to form a biologically active, composite cytokine, IL-23. IL-23 shares some *in vivo* functions with IL-12, including the activation of the transcription factor Stat4. Indeed, the receptors for each appear to share one subunit, but also have at least one distinct subunit. Activated dendritic cells secrete detectable levels of this heterodimeric complex and IL-23 binds to IL-12R β1 but fails to engage IL-12R β2. Similar to IL-12, human IL-23 stimulates IFN-γ production and proliferation in PHA blast T cells, as well as in CD45RO (memory) T cells. Ubiquitous transgenic expression of the IL-23 subunit p19 induces multi-organ inflammation, runting, infertility and premature death. The gene which encodes IL-23 maps to human chromosome 12q13.3.

REFERENCES

1. Oppmann, B., et al. 2000. Novel p19 protein engages IL-12 p40 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.
3. Frucht, D.M. 2002. IL-23: a cytokine that acts on memory T cells. Sci. STKE 2002: PE1.
4. Cooper, A.M., et al. 2002. Mice lacking bioactive IL-12 can generate protective, antigen-specific cellular responses to mycobacterial infection only if the IL-12 p40 subunit is present. J. Immunol. 168: 1322-1327.
5. Watford, W.T., et al. 2004. Signaling by IL-12 and IL-23 and the immunoregulatory roles of Stat4. Immunol. Rev. 202: 139-156.
6. Vanden Eijnden, S., et al. 2005. IL-23 upregulates IL-10 and induces IL-17 synthesis by polyclonally activated naive T cells in human. Eur. J. Immunol. 35: 469-475.

CHROMOSOMAL LOCATION

Genetic locus: IL23A (human) mapping to 12q13.3; Il23a (mouse) mapping to 10 D3.

SOURCE

IL-23 (D-12) is a mouse monoclonal antibody raised against amino acids 75-187 mapping near the C-terminus of IL-23 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

IL-23 (D-12) is recommended for detection of IL-23 α subunit p19 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IL-23 siRNA (h): sc-43860, IL-23 siRNA (m): sc-60028, IL-23 shRNA Plasmid (h): sc-43860-SH, IL-23 shRNA Plasmid (m): sc-60028-SH, IL-23 shRNA (h) Lentiviral Particles: sc-43860-V and IL-23 shRNA (m) Lentiviral Particles: sc-60028-V.

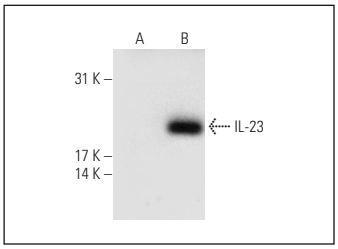
Molecular Weight of IL-23 p19 subunit: 19 kDa.

Positive Controls: IL-23 (m): 293T Lysate: sc-121044.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



IL-23 (D-12): sc-271349. Western blot analysis of IL-23 expression in non-transfected: sc-117752 (**A**) and mouse IL-23 transfected: sc-121044 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, L., et al. 2022. Myeloid cell-specific deletion of Capns1 prevents macrophage polarization toward the M1 phenotype and reduces interstitial lung disease in the bleomycin model of systemic sclerosis. Arthritis Res. Ther. 24: 148.
2. González-Chávez, S.A., et al. 2023. Levofloxacin induces differential effects in the transcriptome between the gut, peripheral and axial joints in the Spondyloarthritis DBA/1 mice: improvement of intestinal dysbiosis and the overall inflammatory process. PLoS ONE 18: e0281265.

RESEARCH USE

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