

## IL-23 (G-20): sc-21083

### 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 $\beta$ 1 but fails to engage IL-12R $\beta$ 2. Similar to IL-12, human IL-23 stimulates IFN- $\gamma$  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 12.

### 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.
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.
7. Zhang, X.Y., et al. 2006. Identification and expression analysis of alternatively spliced isoforms of human interleukin-23 receptor gene in normal lymphoid cells and selected tumor cells. *Immunogenetics* 57: 934-943.

### CHROMOSOMAL LOCATION

Genetic locus: IL23A (human) mapping to 12q13.3; IL23a (mouse) mapping to 10 D3.

### SOURCE

IL-23 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of IL-23 of rat 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-21083 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

IL-23 (G-20) is recommended for detection of IL-23  $\alpha$  subunit p19 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

IL-23 (G-20) is also recommended for detection of IL-23  $\alpha$  subunit p19 in additional species, including equine.

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.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

1. Daniel, C., et al. 2008. Immune modulatory treatment of trinitrobenzene sulfonic acid colitis with calcitriol is associated with a change of a T helper Th1/Th17 to a Th2 and regulatory T cell profile. *J. Pharmacol. Exp. Ther.* 324: 23-33.
2. Glatigny, S., et al. 2012. Proinflammatory Th17 cells are expanded and induced by dendritic cells in spondylarthritis-prone HLA-B27-transgenic rats. *Arthritis Rheum.* 64: 110-120.

### 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.



Try **IL-23 (C-3): sc-271279** or **IL-23 (G-6): sc-271280**, our highly recommended monoclonal alternatives to IL-23 (G-20).