

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-23 p19 in direct ELISAs and Western blots.
Source	Recombinant Monoclonal Rabbit IgG _{2B} Clone # 1193B
Purification	Protein A or G purified from cell culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-23 p19 Arg20-Pro189 Accession # Q9NPF7
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-23-induced IL-17 secretion in mouse splenocytes. Aggarwal, S. <i>et al.</i> (2003) J. Biol. Chem. 278 :1910. The Neutralization Dose (ND ₅₀) is typically 0.15-0.9 µg/mL in the presence of 0.3 ng/mL Recombinant Human IL-23.	

DATA

<p>Western Blot</p> <p>Detection of Human IL-23 p19 by Western Blot. Western blot shows lysates of CHO Chinese hamster ovary cell line either mock transfected or transfected with human IL-23 p19. PVDF membrane was probed with 1 µg/mL of Rabbit Anti-Human IL-23 p19 Monoclonal Antibody (Catalog # MAB12901) followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for IL-23 p19 at approximately 19 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>	<p>Neutralization</p> <p>IL-17 Secretion Induced by IL-23 and Neutralization by Human IL-23 Antibody. Recombinant Human IL-23 (Catalog # 1290-IL) stimulates IL-17 secretion in mouse splenocytes in a dose-dependent manner (orange line), as measured by the Mouse IL-17 Quantikine ELISA Kit (Catalog # M1700). Under these conditions, IL-17 secretion elicited by Recombinant Human IL-23 (0.3 ng/mL) is neutralized (green line) by increasing concentrations of Rabbit Anti-Human IL-23 p19 Monoclonal Antibody (Catalog # MAB1290). The ND₅₀ is typically 0.15-0.9 µg/mL.</p>
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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Interleukin 23 (IL-23) is a heterodimeric cytokine composed of two disulfide-linked subunits, a p19 subunit that is unique to IL-23, and a p40 subunit that is shared with IL-12 (1-5). The p19 subunit has homology to the p35 subunit of IL-12, as well as to other single chain cytokines such as IL-6 and IL-11. The p40 subunit is homologous to the extracellular domains of the hematopoietic cytokine receptors. Human p19 cDNA encodes a 189 amino acid residue (aa) precursor protein with a putative 19 aa signal peptide and 170 aa mature protein. Human and mouse p19 share 70% aa sequence identity. Although p19 is expressed by activated macrophages, dendritic cells, T cells, and endothelial cells, only activated macrophages and dendritic cells express p40 concurrently to produce IL-23. The functional IL-23 receptor complex consists of two receptor subunits, the IL-12 receptor beta 1 subunit (IL-12 R β 1) and the IL-23-specific receptor subunit (IL-23 R). IL-23 has biological activities that are similar to, but distinct from IL-12. Both IL-12 and IL-23 induce proliferation and IFN- γ production by human T cells. While IL-12 acts on both naive and memory human T cells, the effects of IL-23 is restricted to memory T cells. In mouse, IL-23 but not IL-12, has also been shown to induce memory T cells to secrete IL-17, a potent proinflammatory cytokine. IL-12 and IL-23 can induce IL-12 production from mouse splenic DC of both the CD8⁻ and CD8⁺ subtypes, however only IL-23 can act directly on CD8⁺ DC to mediate immunogenic presentation of poorly immunogenic tumor/self peptide.

References:

1. Oppmann, B. *et al.* (2000) *Immunity* **13**:715.
2. Lankford, C.S. and D.M. Frucht (2003) *J. Leukoc. Biol.* **73**:49.
3. Parham, C. *et al.* (2002) *J. Immunol.* **168**:5699.
4. Belladonna, M.L. *et al.* (2002) *J. Immunol.* **168**:5448.
5. Aggarwal, S. *et al.* (2003) *J. Biol. Chem.* **278**:1910.