

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human IL-12/IL-23 p40 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human IL-23 p19 and recombinant mouse IL-23 p19 was observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human IL-12/IL-23 p40 p40: Ile23-Ser328, Accession # P29460; p19: Ala21-Pro189, Accession # AAG37232
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 as a 0.2 µm filtered solution in PBS.

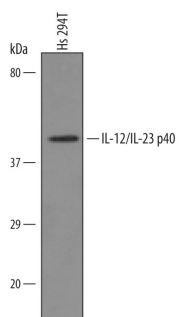
APPLICATIONS

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) <i>J. Biol. Chem.</i> 278 :1910. The Neutralization Dose (ND ₅₀) is typically 0.004-0.02 µg/mL in the presence of 0.75 ng/mL Recombinant Human IL-23.

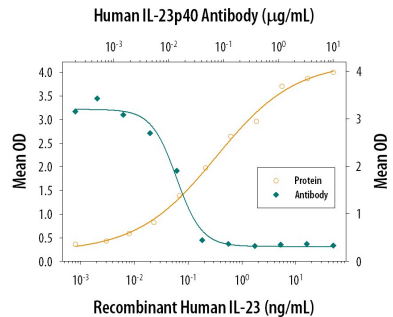
DATA

Western Blot



Detection of Human IL-12/IL-23 p40 by Western Blot.
Western blot shows lysates of Hs 294T human melanoma cell line. PVDF Membrane was probed with 1 µg/mL of Goat Anti-Human IL-12/IL-23 p40 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF309) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for IL-12/IL-23 p40 at approximately 40 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

Neutralization



IL-17 Secretion Induced by IL-23 and Neutralization by Human IL-12/IL-23 p40 Antibody.
Recombinant Human IL-23 (Catalog # 1290-IL) induces IL-17 secretion in the mouse splenocytes in a dose-dependent manner (orange line), as measured by Mouse IL-17 Quantikine kit. IL-17 Secretion elicited by Recombinant Human IL-23 (0.75 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human IL-12/IL-23 p40 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF309). The ND₅₀ is typically 0.004-0.02 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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.