

## Product Information

### **ANTI-INTERLEUKIN-12 (IL-12) RECEPTOR $\beta$ 1, HUMAN**

Developed in Goat, Affinity Isolated Antibody

Product Number **I 4153**

#### **Product Description**

Anti-Interleukin-12 Receptor  $\beta$ 1, Human (IL-12 R $\beta$ 1) is developed in goat using purified recombinant human IL-12 R $\beta$ 1, expressed in mouse NSO cells, as immunogen. The antibody is purified using human IL-12 R $\beta$ 1 affinity chromatography.

Anti-Human IL-12 R $\beta$ 1 may be used to localize and detect recombinant human IL-12 R $\beta$ 1 by immunoblotting and ELISA. By ELISA and immunoblotting, the antibody shows approximately 5% cross-reactivity with recombinant mouse IL-12 R $\beta$ 1.

Interleukin-12 (IL-12) was identified as a factor secreted by human Epstein-Barr (EBV)-transformed B cell lines.<sup>1</sup> IL-12, or Natural Killer Cell Stimulatory Factor (NKSF), is a 75 kDa disulfide-linked heterodimer of a 35 kDa subunit and 40 kDa subunit.<sup>2</sup> IL-12 is produced predominantly by monocytes and NK cells<sup>2</sup> and induces T cells and NK cells to produce IFN- $\gamma$ . Human IL-12 is not active on mouse cells, but murine IL-12 is active on both murine and human lymphocytes.<sup>3</sup> IL-12 signals through the IL-12 receptor, which is composed of at least two subunits designated  $\beta$ 1 and  $\beta$ 2.<sup>4,5</sup> Both IL-12 receptor subunits are members of the hemopoietin receptor superfamily and have strong homology to the gp130 receptor.<sup>4</sup> The  $\beta$ 1 receptor, although a low affinity binder of IL-12, is not capable of transducing an IL-12-mediated signal.<sup>5</sup> A second subunit of the IL-12 receptor was subsequently identified that when coexpressed with the  $\beta$ 1 subunit forms a high affinity receptor for IL-12 and confers IL-12 signaling.<sup>5</sup>

#### **Reagents**

Anti-Human IL-12 R $\beta$ 1 is supplied lyophilized from a 0.2  $\mu$ m filtered solution of phosphate buffered saline. Endotoxin level is < 10 ng per mg antibody as determined by the LAL method.

#### **Preparation Instructions**

To one vial of lyophilized powder, add 1 ml of 0.2  $\mu$ m-filtered PBS to produce a 0.1 mg/ml stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

#### **Storage/Stability**

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2-8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing.

#### **Product Profile**

For indirect ELISA, a working concentration of 0.5-1.0  $\mu$ g/ml is determined to detect a limit of ~0.12 ng/well of recombinant human IL-12 R $\beta$ 1.

For indirect immunoblotting, a working concentration of 0.1-0.2  $\mu$ g/ml is determined using human IL-12 R $\beta$ 1 at 20 ng/lane under non-reducing and reducing conditions.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

## References

1. Kobayashi, M., et al., Identification and purification of natural killer cell stimulatory factor (NKSF), a cytokine with multiple biologic effects on human lymphocytes. *J. Exp. Med.*, **170**, 827-845 (1989).
2. Storkus, W.J., et al., Interleukin-12, in *The Cytokine Handbook*, 3rd Edition, Thomson, A.W., (ed.), Academic Press (San Diego, CA: 1998), pp. 391-425.
3. Schoenhaut, D.S., et al., Cloning and expression of murine IL-12. *J. Immunol.*, **148**, 3433-3440 (1992).
4. Chua, A.O., et al., Expression cloning of a human IL-12 receptor component. A new member of the cytokine receptor superfamily with strong homology to gp130. *J. Immunol.*, **153**, 128-136 (1994).
5. Presky, D.H., et al., A functional interleukin 12 receptor complex is composed of two  $\beta$ -type cytokine receptor subunits. *Proc. Natl. Acad. Sci. USA*, **93**, 14002-14007 (1996).

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