

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-31 RA in direct ELISAs and western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse IL-31 RA is observed.
Source	Monoclonal Rat IgG ₁ Clone # 313308
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	NS0-derived rhIL-31 RA extracellular domain aa 20-516 Accession # NP_620586
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Flow Cytometry	0.25-1 µg/10 ⁶ cells	U937 human histiocytic lymphoma cell line (untreated) or human peripheral blood mononuclear cells (PBMCs) treated with Recombinant Human IFN-γ (Catalog # 285-1F)

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

The interleukin-31 receptor A subunit (IL-31 RA), also known as gp130-Like Monocyte Receptor (GLM-R or GPL), is a ~100 kDa type I transmembrane glycoprotein that is classified as being a type I cytokine receptor (1, 2). A heterodimeric complex of IL-31 RA and the oncostatin M receptor (OSM-R) functions as the signaling receptor for IL-31 (3). Both subunits are inducibly expressed throughout the myelomonocytic lineage and are upregulated by interferon-γ and bacterial lipopolysaccharides (1-3). IL-31 RA is also expressed on keratinocytes, dorsal root ganglia neurons, and variably on lung epithelial cells (3-6). The 732 amino acid (aa) IL-31 RA contains a 19 aa signal sequence, a 500 aa extracellular domain (ECD), a 21 aa transmembrane domain and a 192 aa cytoplasmic domain. The ECD shares 60%, 58%, 73% and 70% aa identity with mouse, rat, canine and bovine IL-31 RA ECD, respectively. Human IL-31 receptors do not respond to mouse IL-31 (7). The ECD contains five fibronectin type III domains; the first two contain four conserved cysteine residues and a WSXWS motif common to type I cytokine receptors (2). Twelve alternately spliced human IL-31 RA isoforms are known and range in size from 356-745 amino acids. A long (745 aa) and a short (560 aa) transmembrane form are the predominant forms, and many cell lines express both forms (8). The long form, like the 732 aa form, signals by recruiting STAT3, 5 or 1, while the short form does not recruit STATs and inhibits IL-31 signaling. The ratio of these forms and their co-expression with OSM-R determines a cell's response to IL-31 (8). In both humans and transgenic mice, IL-31 from skin-homing Th2 cells may contribute to the pruritis (itching) associated with nonatopic dermatitis, especially in infected skin (3, 9, 10).

References:

1. Ghilardi, N. *et al.* (2002) *J. Biol. Chem.* **277**:16831.
2. Diveu, C. *et al.* (2003) *J. Biol. Chem.* **278**:49850.
3. Dillon, S. R. *et al.* (2004) *Nat. Immunol.* **5**:752.
4. Chattopadhyay, S. *et al.* (2007) *J. Biol. Chem.* **282**:3014.
5. Perrigoue, J. G. *et al.* (2007) *J. Exp. Med.* **204**:481.
6. Bando, T. *et al.* (2006) *Neuroscience* **142**:1263.
7. Broxmeyer, H. E. *et al.* (2007) *Exp. Hematol.* **35**:78.
8. Diveu, C. *et al.* (2004) *Eur. Cytokine. Netw.* **15**:291.
9. Bilborough, J. *et al.* (2006) *J. Allergy Clin. Immunol.* **117**:418.
10. Sonkoly, E. *et al.* (2006) *J. Allergy Clin. Immunol.* **117**:411.

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