

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IL-22 R $\alpha$ 1 in direct ELISAs. In direct ELISAs, 25% cross-reactivity with recombinant human (rh) IL-22 R $\alpha$ 1 is observed and no cross-reactivity with rhIL-20 R $\alpha$ , recombinant mouse (rm) IL-20 R $\alpha$ , rhIL-22BP, or rmlIL-22BP is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 496514
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse IL-22 R $\alpha$ 1 Thr18-Ala228 Accession # Q80XZ4
<b>Conjugate</b>	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
<b>Formulation</b>	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
<b>Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	Hepa 1-6 mouse hepatoma cell line

#### PREPARATION AND STORAGE

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

#### BACKGROUND

The IL-22 receptor, also known as IL-22 R $\alpha$ 1 and CRF2-9, is an approximately 65 kDa type I transmembrane glycoprotein that belongs to the type II cytokine receptor family (CRF). IL-22 R $\alpha$ 1 contains a 211 amino acid (aa) extracellular domain (ECD) with two fibronectin type III repeats, and a 330 aa cytoplasmic domain (1). Within the ECD, mouse IL-22 R $\alpha$ 1 shares 78%, 78%, and 94% aa sequence identity with canine, human, and rat IL-22 R $\alpha$ 1, respectively. It shares 20%-26% aa sequence identity with the ECDs of other class II receptors IL-10 R, IL-20 R, and IL-28 R. IL-22 R $\alpha$ 1 associates with either IL-10 R $\beta$  or IL-20 R $\beta$  to form receptor complexes with distinct ligand selectivities. IL-10 R $\beta$  is a shared subunit of the IL-10, -22, -26, -28, and -29 receptors, while IL-20 R $\beta$  is a shared subunit of the IL-19, -20, -22, and -24 receptors (2). IL-22 R $\alpha$ 1/IL-10 R $\beta$  is an IL-22 responsive receptor (3, 4), and IL-22 R $\alpha$ 1/IL-20 R $\beta$  is an IL-20 or IL-24 responsive receptor (5, 6). In both cases, IL-22 R $\alpha$ 1 functions as the high affinity ligand binding subunit, and subsequent association with IL-10 R $\beta$  or IL-20 R $\beta$  serves to stabilize the complex (3, 6-9). IL-22 R $\alpha$ 1 contains cytoplasmic motifs for interactions with signal transduction molecules, but association with IL-10 R $\beta$  or IL-20 R $\beta$  is required for signal transduction (3, 7). IL-22BP functions as a competitive antagonist by binding IL-22 and preventing its association with IL-22 R $\alpha$ 1 (8, 10). Even though it is a receptor for interleukins, IL-22 R $\alpha$ 1 is not expressed on hematopoietic cells (7, 11, 12). Instead, IL-22 R $\alpha$ 1 expression is restricted to epithelial and stromal cells (7, 11-14). IL-22 R $\alpha$ 1 signaling promotes innate immune responses and wound healing at sites of infection and inflammation. This includes upregulation of antimicrobial, acute phase, proinflammatory, and extracellular matrix proteins as well as proteases (4, 12, 14, 15). IL-22 R $\alpha$ 1 signaling also promotes downregulation of proteins involved in keratinocyte differentiation (4, 15).

#### References:

1. Tachiiri, A. *et al.* (2003) *Genes Immun.* **4**:153.
2. Langer, J.A. *et al.* (2004) *Cytokine Growth Factor Rev.* **15**:33.
3. Xie, M-H. *et al.* (2000) *J. Biol. Chem.* **275**:31335.
4. Boniface, K. *et al.* (2005) *J. Immunol.* **174**:3695.
5. Dumoutier, L. *et al.* (2001) *J. Immunol.* **167**:3545.
6. Wang, M. *et al.* (2002) *J. Biol. Chem.* **277**:7341.
7. Kotenko, S.V. *et al.* (2001) *J. Biol. Chem.* **276**:2725.
8. Li, J. *et al.* (2004) *Int. Immunopharmacol.* **4**:693.
9. Logsdon, N.J. *et al.* (2002) *J. Interferon Cytokine Res.* **22**:1099.
10. Kotenko, S.V. *et al.* (2001) *J. Immunol.* **166**:7096.
11. Nagalakshmi, M.L. *et al.* (2004) *Int. Immunopharmacol.* **4**:577.
12. Nagalakshmi, M.L. *et al.* (2004) *Int. Immunopharmacol.* **4**:679.
13. Aggarwal, S. *et al.* (2001) *J. Interferon Cytokine Res.* **21**:1047.
14. Wolk, K. *et al.* (2004) *Immunity* **21**:241.
15. Wolk, K. *et al.* (2006) *Eur. J. Immunol.* **36**:1309.

**Mouse IL-22 R $\alpha$ 1**  
**Alexa Fluor® 350-conjugated Antibody**

Monoclonal Rat IgG<sub>2A</sub> Clone # 496514

Catalog Number: FAB42941U  
100  $\mu$ g

**PRODUCT SPECIFIC NOTICES**

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.