

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse CD25/IL-2 R $\alpha$ in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse (rm) $\gamma_c$ , recombinant human CD25/IL-2 R $\alpha$ , rmlL-2 R $\beta$ , or rmlL-15 R is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 280406
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse CD25/IL-2 R $\alpha$ Glu22-Lys236 Accession # P01590
<b>Conjugate</b>	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 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 µg/10 <sup>6</sup> cells	Mouse splenocytes treated overnight with anti-mouse CD3 (10 µg/mL; Catalog # MAB484), anti-mouse CD28 (5 µg/mL; Catalog # AF483), TGF-beta (10 ng/mL; Catalog # 100-B), and rmlL-2 (20 ng/mL; (Catalog # 1150-ML).

#### 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

IL-2 receptor alpha (IL-2 R $\alpha$ ), also known as CD25, is a 55 kDa type I membrane glycoprotein that belongs to the family of cytokine receptors that utilize the common gamma chain subunit ( $\gamma_c$ ). IL-2 R $\alpha$  is primarily expressed on activated T cells and on regulatory T cells (Treg) (1-3). The mouse IL-2 R $\alpha$  cDNA encodes a 268 amino acid (aa) precursor that includes a 21 aa signal peptide, a 215 aa extracellular domain (ECD) with two Sushi domains, a 21 aa transmembrane segment, and an 11 aa cytoplasmic domain (4, 5). Within the ECD, mouse IL-2 R $\alpha$  shares 81% and 58% aa sequence identity with rat and human IL-2 R $\alpha$ , respectively. It shares approximately 15% aa sequence identity with IL-4, -7, -9, -15, and -21 receptor subunits that also complex with  $\gamma_c$ . IL-2 R $\beta$  (CD122) and  $\gamma_c$  (IL-2 R $\gamma$ /CD132) dimerize to form a constitutively expressed intermediate affinity IL-2 receptor (6, 7). By itself, IL-2 R $\alpha$  binds IL-2 with low affinity. It associates with IL-2 R $\beta$  and  $\gamma_c$  to generate a ternary high affinity IL-2 receptor complex (8). A soluble form of IL-2 R $\alpha$  can be generated by proteolytic cleavage of the cell surface receptor, rendering the T cell unresponsive to IL-2 (9, 10). Increased serum levels of soluble IL-2 R $\alpha$  are found in some cancers and immune disorders (11). IL-2 R $\alpha$  is required for activation induced cell death (AICD) of naive T cells, a mechanism responsible for deleting autoreactive T cell clones (12, 13). IL-2 R $\alpha$  is also required for the development of CD4<sup>+</sup>CD25<sup>+</sup> Treg which suppress autoreactive CD4<sup>+</sup> T cells, thereby contributing to peripheral T cell homeostasis (12-14).

#### References:

1. Minami, Y. *et al.* (1993) *Annu. Rev. Immunol.* **11**:245.
2. Kovanen, P.E. and W.J. Leonard (2004) *Immunol. Rev.* **202**:67.
3. Bluestone, J.A. and Q. Tang (2005) *Curr. Opin. Immunol.* **17**:638.
4. Miller, J. *et al.* (1985) *J. Immunol.* **134**:4212.
5. Shimizu, A. *et al.* (1985) *Nucleic Acids Res.* **13**:1505.
6. Hatakeyama, M. *et al.* (1989) *Science* **244**:551.
7. Takeshita, T. *et al.* (1992) *Science* **257**:379.
8. Wang, X. *et al.* (2005) *Science* **310**:1159.
9. Wagner, D.K. *et al.* (1986) *J. Immunol.* **137**:592.
10. Schulz, O. *et al.* (1998) *J. Exp. Med.* **187**:271.
11. Witkowska, A.M. (2005) *Mediat. Inflamm.* **2005**:121.
12. Willerford, D.M. *et al.* (1995) *Immunity* **3**:521.
13. Van Parijs, L. *et al.* (1997) *J. Immunol.* **158**:3738.
14. Almeida, A.R.M. *et al.* (2002) *J. Immunol.* **169**:4850.

# Mouse CD25/IL-2 R alpha Alexa Fluor® 750-conjugated Antibody

Monoclonal Rat IgG<sub>2A</sub> Clone # 280406

Catalog Number: FAB2438S

100 µg

## 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.