

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat CD25/IL-2 R α in ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse (rm) CD25/IL-2 R alpha, rmlL-2 R beta, rmCommon gamma chain, rmlL-15 R alpha, or recombinant human CD25/IL-2 R alpha is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 745520
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant rat CD25/IL-2 R α Glu22-Gln235 Accession # P26897
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 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	Rat splenocytes

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. ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

IL-2 receptor alpha (IL-2 R α), 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 (γ_c). IL-2 R α is primarily expressed on activated T cells and on regulatory T cells (Treg) (1 - 3). The rat IL-2 R α cDNA encodes a 267 amino acid (aa) precursor that includes a 21 aa signal peptide, a 214 aa extracellular domain (ECD) with two Sushi domains, a 21 aa transmembrane segment, and an 11 aa cytoplasmic domain (4). Within the ECD, rat IL-2 R α shares 58% and 81% aa sequence identity with human and mouse IL-2 R α , respectively. It shares approximately 15% aa sequence identity with IL-4, -7, -9, -15, and -21 receptor subunits that also complex with γ_c . IL-2 R β (CD122) and γ_c (IL-2 R γ /CD132) dimerize to form a constitutively expressed intermediate affinity IL-2 receptor (5, 6). By itself, IL-2 R α binds IL-2 with low affinity. It associates with IL-2 R β and γ_c to generate a ternary high affinity IL-2 receptor complex (7). A soluble form of IL-2 R α can be generated by proteolytic cleavage of the cell surface receptor, rendering the T cell unresponsive to IL-2 (8, 9). Increased serum levels of soluble IL-2 R α are found in some cancers and immune disorders (10). IL-2 R α is required for activation induced cell death (AICD) of naive T cells, a mechanism responsible for deleting autoreactive T cell clones (11, 12). IL-2 R α is also required for the development of CD4⁺CD25⁺ Treg which suppress autoreactive CD4⁺ T cells, thereby contributing to peripheral T cell homeostasis (11-13).

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. Page, T.H. and M.J. Dallman (1991) *Eur. J. Immunol.* **21**:2133.
5. Hatakeyama, M. *et al.* (1989) *Science* **244**:551.
6. Takeshita, T. *et al.* (1992) *Science* **257**:379.
7. Wang, X. *et al.* (2005) *Science* **310**:1159.
8. Wagner, D.K. *et al.* (1986) *J. Immunol.* **137**:592.
9. Schulz, O. *et al.* (1998) *J. Exp. Med.* **187**:271.
10. Witkowska, A.M. (2005) *Mediators Inflamm.* **2005**:121.
11. Willerford, D.M. *et al.* (1995) *Immunity* **3**:521.
12. Van Parijs, L. *et al.* (1997) *J. Immunol.* **158**:3738.
13. Almeida, A.R.M. *et al.* (2002) *J. Immunol.* **169**:4850.

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