

#### DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat CD25/IL-2 R $\alpha$ 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.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 745520
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant rat CD25/IL-2 R $\alpha$ Glu22-Gln235 Accession # P26897
<b>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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	Rat splenocytes

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

#### 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 rat IL-2 R $\alpha$  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 $\alpha$  shares 58% and 81% aa sequence identity with human and mouse 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 (5, 6). 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 (7). 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 (8, 9). Increased serum levels of soluble IL-2 R $\alpha$  are found in some cancers and immune disorders (10). 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 (11, 12). 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 (11-13).

#### References:

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