

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, rmlIL-2 R beta, rmCommon gamma chain, rmlIL-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
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μ m filtered solution in PBS.

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	2.5 μ g/10 ⁶ cells	Rat splenocytes

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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:

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