Mouse CD25/IL-2 R alpha Antibody

Monoclonal Rat IgG_{2A} Clone # 280406

Catalog Number: MAB2438

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse CD25/IL-2 Rα in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse (rm) γ_c, recombinant human CD25/IL-2 Rα, rmIL-2 Rβ, or rmIL-15 R is observed.
Source	Monoclonal Rat IgG_{2A} Clone # 280406
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse CD25/IL-2 Rα Glu22-Lys236 Accession # P01590
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm 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 μg/10^6 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 rmIL-2 (20 ng/mL; (Catalog # 1150-ML).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
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.** ● 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 Rα), 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 Rα is primarily expressed on activated T cells and on regulatory T cells (Treg) (1-3). The mouse IL-2 Rα 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 Rα shares 81% and 58% aa sequence identity with rat and human IL-2 Rα, 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 Rβ (CD122) and γ_c (IL-2 Rγ/CD132) dimerize to form a constitutively expressed intermediate affinity IL-2 receptor (6, 7). By itself, IL-2 Rα binds IL-2 with low affinity. It associates with IL-2 Rβ and γ_c to generate a ternary high affinity IL-2 receptor complex (8). A soluble form of IL-2 Rα 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 Rα are found in some cancers and immune disorders (11). IL-2 Rα 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 Rα is also required for the development of $CD4^+CD25^+$ Treg which suppress autoreactive $CD4^+$ T cells, thereby contributing to peripheral T cell homeostasis (12-14).

References:

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