ProductInformation

ANTI-HUMAN INTERLEUKIN-2 SOLUBLE RECEPTOR β (IL-2 sRβ)
Developed in Goat, Affinity Isolated Antibody

Product Number **I6277**

Product Description

Anti-Human Interleukin-2 Soluble Receptor Beta (IL-2 sRβ) is developed in goat using a recombinant human IL-2 sRβ), expressed in Sf21 cells as immunogen. The antibody is purified using IL-2 Rβ affinity chromatography.

Anti-Human IL-2 sRβ may be used to neutralize human cell surface IL-2 Rβ mediated-bioactivity. For best results using cells expressing the high affinity IL-2 receptors, the use of both anti-IL-2 Rα (Product No. I6152) and anti-IL-2 Rβ is recommended. By ELISA and immunoblotting the antibody shows < 15% cross-reactivity with recombinant human IL-3 sRα, < 5% cross-reactivity with recombinant human IL-1 RII, IL-2 sRγ, IL-5 sRα, and < 2% cross-reactivity with recombinant human IL-2 sRα, IL-4 sR, and IL-5 sRβ. In addition, the antibody shows no cross-reactivity with other cytokines tested.*

Anti-Human IL-2 sRβ may be used for neutralization of the biological activity mediated by IL-2 Rβ and for the detection of IL-2 Rβ by immunoblotting and ELISA.

The biological effects of IL-2R signals are much more complex than simply mediating T-cell growth. Depending on the set of conditions, IL-2R signals may also promote cell survival, effector function, and apoptosis. These sometimes contradictory effects underscore the fact that a diversity of intracellular signaling pathways are potentially activated by IL-2R. There are at least 3 components of the IL-2 receptor, IL-2 Rα, IL-2 βR, and IL-2 Rγ chains. The IL-2 Rγ chain is shared by IL-2, IL-4 and IL-7.[1,2] The low affinity α chain is a 55 kD polypeptide. It is incapable of transmitting intracellular signals due to its short cytoplasmic tail. However, it can bind IL-2 rapidly to the cell membrane. The β chain (75 kD) and the γ chain (64 kD) form a complex that can bind IL-2 with high affinity and slow dissociation and can mediate signal transduction.
Cells known to express the β-chain include: activated $CD56^+$ (NK) cells plus $CD8^+$ and $CD4^+$ T cells,[3,4] resting NK cells and, perhaps, $CD8^+$ T cells,[3,4] activated and resting B cells,[5] mature thymocytes,[6] embryonic fibroblasts,[7] resting monocytes[8] and neutrophils.[9]

Reagents

The product is supplied lyophilized from a 0.2 µm filtered solution in phosphate buffered saline. Endotoxin level is < 10 ng per mg antibody as determined by the LAL method.

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 µm-filtered PBS to produce a 0.1 mg/ml stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20°C. Reconstituted product may be stored at 2-8°C for at least one month. For prolonged storage, freeze in working aliquots at –20°C. Avoid repeated freezing and thawing.

Procedure

Anti-Human IL-2 sRβ is tested for its ability to neutralize human cell surface IL-2 Rβ mediated IL-2 bioactivity in a ^{3}H-thymidine incorporation assay using MO7e cells.[10] The ND_{50} of the antibody is defined as the concentration of antibody resulting in a one-half maximal inhibition of the cell surface IL-2 Rβ mediated recombinant human IL-2 response on a responsive cell line.

Product Profile

For neutralization, a working concentration of 10-30 µg/ml of Anti-Human IL-2 sRβ will block 50% of the bioactivity due to 30 ng/ml recombinant human IL-2 in a ^{3}H-thymidine incorporation assay using 10^5/ml MO7e cells.

For Indirect Immunoblotting, a working concentration of 1-2 µg/ml is determined using recombinant human IL-2 sRβ at 1 ng/lane under non-reducing conditions and 0.5 ng/ml under reducing conditions.

For Indirect ELISA, a working concentration of 0.5 - 1 µg/ml is determined to detect recombinant IL-2 sRβ to a limit of 0.15 ng/well.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

1. Noguchi, M., et al., Science, **262**, 1877 (1993)
2. Russel, S.M., et al., Science, **262**, 1880 (1993).
3. Nakamura, Y., et al., Nature, **369**, 330 (1994).
4. Uchiyama, T., et al., J. Immunol., **126**, 1393 (1981).
5. Taniguchi, T. and Minami, Y., Cell, **73**, 5 (1993).
6. Vanham, G., et al., Clin. Immunol. Immunopathol., **71**, 60 (1994).
7. Caligiuri, M.A., et al., J. Exp. Med., **171**, 1509 (1990).
8. Nakanishi, K., et al., Proc. Natl. Acad. Sci. USA, **89**, 3551 (1992).
9. Leclercq, G., et al., Int. Immunol., **7**, 843 (1995).
10. Hicks, C., et al., Growth Factors, **5**, 201 (1991).
11. Plaisance, S., et al., Int. Immunol., **4**, 739 (1992).
12. Benveniste, E.N., et al., J. Neuroimmunol., **17**, 301 (1988).
13. Espinoza-Delgado, I., et al., J. Leukoc. Biol., **57**, 13 (1995).
14. Waldmann, T.A., Science, **232**, 727 (1986).
15. Herrmann, F., et al., J. Exp. Med., **162**, 1111 (1985).
16. Weidmann, E., et al., Cancer Res., **52**, 5963 (1992).

* rhANG, rhAR, rmB7-2, rhBTC, rhβ-NGF, rhBDNF, rmC10, rhCD4, rhCD8, rhCD28, rhCNTF, rrCNTF, rhEGF, rhENA-78, rhEpo, rhFGF acidic, rhFGF basic, rhFGF-4, rhFGF-5, rhFGF-6, rhFGF-7, rhFGF-9, rhG-CSF, rmG-CSF, rhGM-CSF, rhGM-CSF Rα, rmGM-CSF, rhGROα, rhGROβ, rhGROγ, rhHB-EGF, rhHRG-α, rhHGF, rhI-309, rhIFN-γ, rhIGF-I, rhIGF-I R, rhIL-1α, rhIL-1 RI, rmIL-1α, rhIL-1β, rmIL-1β, rhIL-1ra, rmIL-1ra, rhIL-2, rmIL-2, rhIL-3, rmIL-3, rhIL-4, rmIL-4, rhIL-5, rmIL-5, rhIL-6, rhIL-6 sR, rmIL-6, rhIL-7, rhIL-7 R, rmIL-7, rhIL-8, rhIL-9, rmIL-9, rhIL-10, rhIL-10 sR, rmIL-10, rhIL-11, rhIL-12, rmIL-12, rhIL-13, rmIL-13, rhIL-15, rhIP-10, rhJAK-1, rmJAK-1, rmJE, rhLIF, rmLIF, rhM-CSF, rmM-CSF, rhMCP-1, rhMCP-1 R, rhMCP-2, rhMCP-3, rhMidkine, rhMIP-1α, rmMIP-1α, rhMIP-1β, rmMIP-1β, rmMIP-2, rhNT-3, rhNT-4, rhOSM, rhPD-ECGF, hPDGF, pPDGF, rhPDGF-AA, rhPDGF-AB, rhPDGF-BB, rhPDGF Rα, rhPIGF, rhPTN, rhRANTES, rhSCF, rmSCF, rhsgp130, rhSLPI, rhSTAT-1, rmSTAT-4, hTfR, rhTGF-α, rhTGF-β1, rhTGF-β2, rhTGF-β3, raTGF-β5, rhLAP (TGF-β1), rhLatent TGF-β1, rhTGF-β sRII, rhTGF-β sRIII, rhTNF-α, rmTNF-α, rhTNF-β, rhsTNF RI, rhsTNF RII, rhTPO, rhVEGF

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