3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Tumor Necrosis Factor Soluble Receptor II
produced in goat, IgG fraction of antiserum

Catalog Number **T2315**

Synonym: Anti-TNF sRII

Product Description
Anti-Tumor Necrosis Factor Soluble Receptor II is produced in goat using a recombinant human TNF soluble receptor II, expressed in *E. coli,* as immunogen. This protein represents the non-glycosylated, N-terminal methionyl form of the naturally occurring human soluble type II receptor for TNF, minus 53 amino acids from the proline-rich region just exterior to the transmembrane domain. The antibody is purified using protein G affinity chromatography.

Anti-Tumor Necrosis Factor Soluble Receptor II may be used to detect human TNF sRII by immunoblotting and ELISA. By ELISA, the antibody shows no cross-reactivity with recombinant human TNF sRI.

TNF RII (p75, CD120b) is a 75 kDa transmembrane glycoprotein originally isolated from a human lung fibroblast library.[1] Among the multitude of cells known to express TNF RII are monocytes,[2] endothelial cells,[3] Langerhans cells,[4] and macrophages.[5]

Mouse to human amino acid sequence identity in the TNF RII cytoplasmic domain is 73 %, while amino acid sequence identity in the extracellular region falls to 58%.[6] This drop in extracellular identity is reflected in the observation that human TNF-α is not active in the mouse system.[6] TNF RII to TNF RI, amino acid sequence identity is only about 20% in the extracellular region and 5% in the cytoplasmic domain.[6]

TNF RII consists of a 240 amino acid residue extracellular region, a 27 amino acid residue transmembrane segment and a 173 amino acid residue cytoplasmic domain. [7, 8]

TNF R1 and TNF R2 are members of a family of structurally related membrane receptors that includes lymphotoxin receptor, Fas, WSL-1, DR4, CD40, CD30, CD27, 4-1BB, OX40, and p75 nerve growth factor receptor.[9] Members of the TNFR family can interact through their cytoplasmic domains with a range of intracellular signaling proteins, most of which fall into two distinct groups. The first is the death domain-containing proteins, including TRADD, FADD/MORT1, and RIP, which associate directly with receptors also containing death domains, such as TNF R1 and Fas.[10-12] The second is the TRAF proteins. TRAF1 and TRAF2 were originally identified by their association with the cytoplasmic domain of TNF R2.[13] TRAF proteins appear to function as adaptor proteins. TRAF2 directly binds at least eight intracellular molecules, including TRAF1, c-IAP1, c-IAP2, I-TRAF/TANK, A20, TRIP, RIP, and NIK.[13-20] The best characterized TRAF-mediated signal transduction pathway is the activation of NF-B transcription factors. TRAF2 mediates NF-B activation via the recruitment of the serine/threonine kinase NIK,[20] which can in turn activate CHUK, an IB-specific kinase that triggers IB degradation.[21,22] In addition to recruiting mediators of NF-B activation, TRAF2 can bind at least three other molecules, I-TRAF/TANK, A20, and TRIP, that inhibit its ability to activate NF-B.[16-18]

Reagent
Supplied lyophilized from a 0.2 μm filtered solution in phosphate buffered saline and 5% trehalose.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
To one vial of lyophilized powder, add 1 mL of sterile PBS to produce a 1 mg/mL stock solution of antibody.

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

Product Profile
Immunoblotting: a working concentration of 1-2 μg/mL is determined using recombinant human TNF sRII at 5 ng/lane under non-reducing conditions.

Indirect ELISA, a working concentration of 0.5 -1 μg/mL is determined to detect recombinant human TNF sRII to a limit of 78 pg/well.

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

Endotoxin level is < 0.1 EU per 1 μg antibody as determined by the LAL method.

References

1. Smith, C.A., et al., *Science*, **248**, 1019 (1990).
2. Lien, E., et al., *Eur. J. Immunol.*, **25**, 2714 (1995).
3. Bradley, J.R., et al., *Am. J. Pathol.*, **146**, 27 (1995).
4. Wang, B., et al., *Immunology*, **88**, 284 (1996).
5. de Rochemonteix, B.G., et al., *Am. J. Respir. Cell Mol. Biol.*, **14**, 279 (1996).
6. Lewis, M., et al., *Proc. Natl. Acad. Sci. USA*, **88**, 2830 (1991).
7. Gruss, H-J., and Dower, S.K., *Blood*, **85**, 3378 (1995).
8. Smith, C.A., et al., *Science*, **248**, 1019 (1990).
9. Smith, C. A., et al., *Cell*, 76, 959 (1994).
10. Hsu, H., et al., *Cell*, 81, 495 (1995).
11. Chinnaiyan, A.M., et al., *Cell*, 81, 505 (1995).
12. Boldin, M.P., et al., *J. Biol. Chem.*, 270, 7795 (1995).
13. Rothe, M., et al. *Cell*, 78, 681 (1994).
14. Cheng, G., and Baltimore, D., *Genes Dev.*, 10, 963 (1996).
15. Rothe, M., et al., *Cell*, 83, 1243 (1995).
16. Roth, M., et al., *Proc. Natl. Acad. Sci. USA*, 93, 8241 (1996).
17. Song, H.Y., et al. , *Proc. Natl. Acad. Sic. USA*, 93, 6721 (1996).
18. Lee, S.Y., et al. , *J. Exp. MAD.* , 185, 1275 (1997).
19. Hsu, H., et al., *Immunity*, 4, 387 (1996).
20. Malinin, N.L., et al., *Nature*, 385, 540 (1997).
21. Régnier, C.H., et al., *Cell*, 90, 373 (1997).
22. DiDonato, J.A., et al., *Nature*, 388, 548 (1997).

KAA,PHC 03/08-1