

## Product Information

### Anti-Lymphotoxin $\beta$ Receptor

produced in goat, affinity isolated antibody

Catalog Number **L5412**

#### Product Description

Anti-Lymphotoxin  $\beta$  Receptor is produced in goat using as immunogen purified recombinant human lymphotoxin  $\beta$  receptor ( $\beta$ R) extracellular domain, expressed in mouse NSO cells. The antibody is purified using human lymphotoxin  $\beta$ R affinity chromatography.

Anti-Lymphotoxin  $\beta$  Receptor may be used to localize and detect recombinant human lymphotoxin  $\beta$ R by various immunochemical techniques, including immunoblotting, flow cytometry, and agonist activity.

Tumor necrosis factor- $\beta$  (TNF- $\beta$ ), also known as lymphotoxin (LT or LT- $\alpha$ ) and cytotoxic factor, is a 25 kDa glycoprotein that is tightly regulated by lymphocytes. TNF- $\beta$  and TNF- $\alpha$  share a 28% amino acid sequence identity and as soluble forms, both can exist in solution as homotrimers, activate the same TNF receptors (TNFR1 and TNFR2), and elicit many of the same bioactivities. Unlike TNF- $\alpha$ , TNF- $\beta$  can also form heterotrimers with one or two molecules of the related membrane-bound lymphotoxin- $\beta$  (LT- $\beta$ ). Reportedly, LT- $\alpha$ 1/ $\beta$ 2, the predominant heterotrimer, binds and activates only the LT- $\beta$  receptor, LT- $\beta$ R. The other heterotrimer, LT- $\alpha$ 2/ $\beta$ 1 binds and activates TNFR1 and TNFR2, but not LT- $\beta$ R. TNF- $\beta$  is expressed in activated T, B, and NK cells and in certain transformed cells. Genes for TNF- $\beta$ , LT- $\beta$ , and TNF- $\alpha$  are tightly linked near each other within the MHC. TNF- $\beta$  appears to play many of the same biological roles as TNF- $\alpha$ , but the membrane-bound form with LT- $\beta$  is critical for normal lymphoid organ development. Genetic polymorphisms in TNF- $\alpha$  and TNF- $\beta$  have been linked to certain pathological conditions, including myasthenia gravis. At the amino acid level, human and mouse TNF- $\beta$  are 74% homologous and human and mouse LT- $\beta$  are 80% homologous.

#### Reagent

Lyophilized from 0.2  $\mu$ m-filtered solution in phosphate buffered saline containing carbohydrates.

#### Precautions and Disclaimer

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

#### Preparation Instructions

To one vial of lyophilized powder, add 1 mL of 0.2  $\mu$ m-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  $-20^{\circ}\text{C}$ . Reconstituted product may be stored at  $2-8^{\circ}\text{C}$  for up to one month. For prolonged storage, freeze in working aliquots at  $-20^{\circ}\text{C}$ . Avoid repeated freezing and thawing. Do not store in a frost-free freezer.

#### Product Profile

**Immunoblotting:** a working antibody concentration of 0.1-0.2  $\mu\text{g/mL}$  is determined.

**Flow cytometry:** a working antibody concentration of 2.5  $\mu\text{g}/10^6$  cells with an appropriate secondary antibody for indirect immunofluorescence staining of cells.

**Agonist activity:** this antibody, when immobilized, displays agonist activity on HT29 cells in the presence of 10 U/mL (1 ng/mL) recombinant human IFN- $\gamma$ . Immobilized antibody at 50  $\mu\text{g/mL}$  causes a 2 to 4.5-fold inhibition of HT29 proliferation.

**Note:** In order to obtain the best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

Endotoxin level is  $<0.1$  EU per 1  $\mu\text{g}$  antibody as determined by the LAL method.

## References

1. Turetskaya, R.L., Polymorphism of the tumor necrosis factor genes: association with disease. *Mol. Biol.*, **33**, 355-359 (1999).
2. Ware, C. et al., Tumor necrosis factor-related ligands and receptors, in *The Cytokine Handbook*, 3rd Edition, Thomson, A.W., (ed.), Academic Press (San Diego, CA: 1998), pp. 549-592.
3. Zhai, Y.F. et al., Light, a novel ligand for lymphotoxin  $\beta$  receptor and tr2/hvem induces apoptosis and suppresses *in vivo* tumor formation via gene transfer. *J. Clin. Invest.*, **102**, 1142-1151 (1998).
4. Rennert, P.D. et al., Lymph node genesis is induced by signaling through the lymphotoxin  $\beta$  receptor. *Immunity*, **9**, 71-79 (1998).
5. Browning, J.L. et al., Characterization of lymphotoxin- $\alpha$ - $\beta$  complexes on the surface of mouse lymphocytes. *J. Immunol.*, **159**, 3288-3298 (1997).

SG,PHC,TMS,MAM 06/16-1