Human Thrombopoietin R/Tpo R Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: BAF1016

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Thrombopoietin R/Tpo R in Western blots. In this format, approximately 50% cross-reactivity with recombinant mouse Tpo R is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Thrombopoietin R/Tpo R Gln26-Tyr423 Accession # P40238
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

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
Western Blot	0.1 µg/mL	Recombinant Human Thrombopoietin R/Tpo R (Catalog # 4444-TR)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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

Thrombopoietin receptor (Tpo R), also known as myeloproliferative leukemia protein (c-mpl), is a 95 kDa type I transmembrane protein that is a member of the type I cytokine receptor family within the hematopoietin/cytokine receptor superfamily (1 - 4). The 635 amino acid (aa) full-length human Tpo R contains a 25 aa signal sequence, a 466 aa extracellular domain with a ligand binding domain and two fibronectin type III domains, a transmembrane (TM) domain and a cytoplasmic domain. The extracellular domain of human Tpo R shares 78%, 76%, 81%, 82% and 80% aa identity with mouse, rat, bovine, canine and equine Tpo R, respectively. Humans produce three distinct mRNA species; a P-form, a K-form, and a truncated form (Mpl-tr) lacking a TM domain (3 - 7). The P-form encodes the full-length receptor. The Mpl-tr form, which is expressed in both human and mouse, is intracellular and targets the P-form for degradation (5, 6). The 579 aa K-form has an alternate cytoplasmic domain, but does not dimerize with, or inhibit, the P-form (7). Thrombopoietin (Tpo) is a key regulator of megakaryocytopoiesis, thrombopoiesis and hematopoietic stem cell self-renewal, as reflected by expression of the Tpo R on megakaryocytes, platelets and hematopoietic progenitors (2, 8). Receptor dimerization occurs upon Tpo binding and initiates signaling through the Ras/MAP and JAK/STAT pathways (1, 2). Internalization and degradation of Tpo following Tpo R binding serves to downregulate circulating Tpo (9). Tpo R expressed at low levels on endothelial cells does not appear to contribute to regulation of Tpo (10). Inactivating mutations of Tpo R cause thrombocytopenia, and absence of functional Tpo R is lethal in humans, but not mice. Other mutations, including an activating change in the TM domain, can cause thrombocytosis (11, 12).

References:

1. Kaushansky, K. (2005) J. Clin. Invest. **115**:3339.
2. Deutsch, V.R. and A. Tomer (2006) Br. J. Haematol. **134**:453.
3. Vigon, I. *et al.* (1992) Proc. Natl. Acad. Sci. USA **89**:5640.
4. Mignotte, V. *et al.* (1994) Genomics **20**:5.
5. Li, J. *et al.* (2000) Cytokine **12**:835.
6. Coers, J. *et al.* (2004) J. Biol. Chem. **279**:36397.
7. Millot, G.A. *et al.* (2002) Exp. Hematol. **30**:166.
8. Tong, W. *et al.* (2007) Exp. Hematol. July 14 [Epub ahead of print].
9. Li, J. *et al.* (1999) Br. J. Haematol. **106**:345.
10. Geddis, A.E. *et al.* (2006) Exp. Hematol. **34**:82.
11. Germeshausen, M. *et al.* (2006) Hum. Mutat. **27**:296.
12. Ding, J. *et al.* (2004) Blood **103**:4198.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449