Rat ROBO1 Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: BAF1749

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat ROBO1 in ELISAs and Western blots. In sandwich immunoassays, less than 0.5% cross-reactivity with recombinant human ROBO3 and recombinant mouse ROBO3 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat ROBO1 Lys19-Ile560 Accession # O55005
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 Rat ROBO1 Fc Chimera (Catalog # 1749-RB)
Rat ROBO1 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Rat ROBO1 Antibody (Catalog # MAB17491)
ELISA Detection	0.1-0.4 µg/mL	Rat ROBO1 Biotinylated Antibody (Catalog # BAF1749)
Standard		Recombinant Rat ROBO1 Fc Chimera (Catalog # 1749-RB)

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

Rat ROBO1 (also DUTT1) is a 170-200 kDa member of the four molecule ROBO family of guidance molecules (1-3). The term ROBO derives from round-about, a description of the circuitous pathway axons take in the absence of a functional ROBO gene (3, 4). Rat ROBO1 is a type I transmembrane (TM) glycoprotein that is synthesized as a 1651 amino acid (aa) precursor. It contains an 18 aa signal sequence, an 879 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 733 aa cytoplasmic region (5, 6). The ECD contains five C2-type Ig-like domains (aa 68-541) and three fibronectin (FN) type III domains (aa 561-864). The cytoplasmic region contains multiple 15-20 aa long CC (conserved cytoplasmic) motifs (C0-C3) (7, 8). Rat ROBO1 is likely to have at least one isoform. Based on the human and mouse gene, rat ROBO1 will utilize an alternate start site, creating an A (long) and B (short) isoform. The difference is the presence of a 32 aa extension at the N-terminus of the mature molecule (occurs in the A form) (9-12). Based on ROBO3 studies, this extension will impact the ability of ROBO1 to bind Slit (10). Rat ROBO1 ECD is 98% and 96% aa identical to the ECD in mouse and human ROBO1, respectively. ROBO1 serves as a repulsing molecule for axons that cross the midline. Initially, ROBO3 allows outgrowing axons to traverse the midline/floorplate. Once crossed, axons express ROBO1 which deflects neurites attempting to recross to the ipsilateral side (13). The chemorepulsant activity of ROBO1 is dependent on ROBO1 binding to SLIT1/2. Inhibition of ROBO1 is likely due to ROBO1-ROBO3 heterophilic binding (10, 13-15).

References:

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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