

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Rat                                                                                                                                                                                                                                                                         |
| <b>Specificity</b>        | Detects rat ROBO1 in direct ELISAs and Western blots.                                                                                                                                                                                                                       |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>2B</sub> Clone # 243706                                                                                                                                                                                                                           |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant rat ROBO1<br>Lys19-Ile560<br>Accession # O55005                                                                                                                                                                             |
| <b>Conjugate</b>          | Alexa Fluor 488<br>Excitation Wavelength: 488 nm<br>Emission Wavelength: 515-545 nm                                                                                                                                                                                         |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.

|                                                |                                                                        |
|------------------------------------------------|------------------------------------------------------------------------|
| <b>ELISA Capture (Matched Antibody Pair)</b>   | Optimal dilution of this antibody should be experimentally determined. |
| <b>ELISA Detection (Matched Antibody Pair)</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## 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 shares 98% and 96% aa sequence identity with 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).

## PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.