

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ROBO2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) ROBO1, rhROBO3, or rhROBO4 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 356001
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ROBO2 isoform 1 Ser22-Pro859 Accession # Q9HCK4.2
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	Retinoic acid-differentiated NTERA-2 human testicular embryonic carcinoma cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Human ROBO2 is a 175 kDa member of the 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). Human ROBO2 is a type I transmembrane (TM) glycoprotein that is synthesized as a 1378 amino acid (aa) precursor. It contains a 21 aa signal sequence, an 838 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 498 aa cytoplasmic region (5, 6). The ECD contains five C2-type Ig-like domains (aa 31-504) and three fibronectin (FN) type III domains (aa 522-826). The cytoplasmic region contains multiple 15-20 aa long CC (conserved cytoplasmic) motifs (C0-C2) that are found in ROBO-1 (7, 8). Human ROBO2 has at least two potential isoforms. One isoform shows a cytoplasmic truncation of the C-terminus (aa 1186-1378) (9). A second isoform is a 570 aa soluble form that shows a deletion of the first two and one-half C2-type Ig-like domains (aa 22-285) and terminates after the third fibronectin domain with a unique 20 aa sequence (10). Based on mouse and rat ROBO2 GenBank sequences, considerably more alternate splice forms may occur. Human ROBO2 ECD shares 98% aa sequence identity with the ECD in mouse and canine ROBO2. ROBO2 would appear to play a number of roles in cell adhesion. In the neural tube, it is the receptor for a chemorepellant. Axons that cross the midline are directed, presumably by ROBO2/SLIT chemorepulsion, to lateral positions in the contralateral spinal cord (6, 11, 12). In addition, ROBO2 is both permissive for neurite outgrowth (via ROBO1-ROBO2 interaction) and inhibitory for neurite outgrowth (via ROBO2-SLIT interaction) (13, 14).

References:

1. Rajagopalan, S. *et al.* (2000) *Neuron* **28**:767.
2. Guthrie, S. (2004) *Curr. Biol.* **14**:R632.
3. Guthrie, S. (2001) *Curr. Biol.* **11**:R300.
4. Seeger, M. *et al.* (1993) *Neuron* **10**:409.
5. Kidd, T. *et al.* (1998) *Cell* **92**:205.
6. Nguyen Ba-Charvet, K.T. *et al.* (2001) *J. Neurosci.* **21**:4281.
7. Bashaw, G.J. *et al.* (2000) *Cell* **101**:703.
8. Jen, J.C. *et al.* (2004) *Science* **304**:1509.
9. GenBank Accession # Q9KCK4.
10. Isogai, T. *et al.* (2002) GenBank Accession # AK074780.
11. Mambetisaeva, E.T. *et al.* (2005) *Dev. Dyn.* **233**:41.
12. Long, H. *et al.* (2004) *Neuron* **42**:213.
13. Hivert, B. *et al.* (2002) *Mol. Cell. Neurosci.* **21**:534.
14. Lin, L. *et al.* (2005) *Mol. Cell. Neurosci.* **28**:547.

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