

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse ROBO3 protein		
	Mouse ROBO3 (Gly54-Ser545) Accession # Q9Z214 N-terminus	IEGRMDP	Mouse IgG _{2A} (Glu98-Lys330) C-terminus
N-terminal Sequence Analysis	Gly54		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	81 kDa (monomer)		

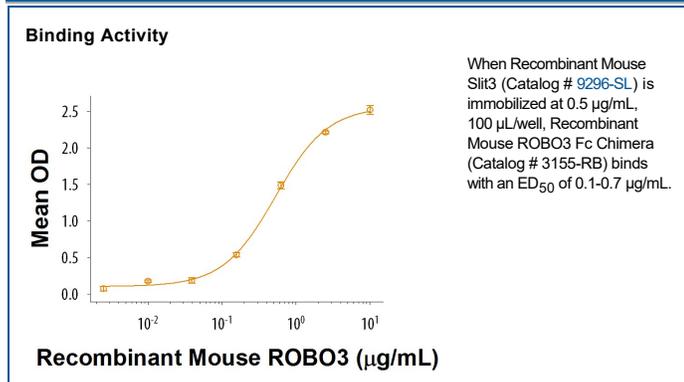
SPECIFICATIONS

SDS-PAGE	100-110 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse Slit3 (Catalog # 9296-SL) is immobilized at 0.5 µg/mL (100 µL/well), the concentration of Recombinant Mouse ROBO3 Fc Chimera that produces 50% of the optimal binding response is 0.1-0.7 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/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. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

Mouse ROBO3 (also named Rig-1) is a 200 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). Mouse ROBO3 is a type I transmembrane glycoprotein that is synthesized as a 1366 amino acid (aa) precursor. It contains a 20 aa signal sequence, an 871 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 454 aa cytoplasmic region (5, 6). The ECD contains five C2-type Ig-like domains (aa 64 - 531) and three fibronectin (FN) type III domains (aa 555-863). The cytoplasmic region contains three of four possible 15-20 aa long CC (conserved cytoplasmic) motifs that are found in ROBO-1 (7, 8). Mouse ROBO3 has multiple isoforms. An alternate start site generates an 1366 aa (precursor) A isoform and a 1344 aa (precursor) B isoform. These two forms only differ in the first 53 and 31 amino acids of the precursor, respectively (9). There are reportedly nine splice variants in the mouse ROBO3 gene. Three result in soluble forms. Little information exists about the isoforms. Mouse ROBO3 ECD is 95%, 84% and 86% aa identical to the ROBO3 ECD in rat, human and canine, respectively. Normally, axons originating on one side of the spinal cord are inhibited from crossing to the other side by a SLIT2-ROBO1 interaction at the midline. ROBO3 is permissive for this event. It is unclear how this is accomplished. One possibility is that it binds directly to ROBO-1, blocking SLIT activation. A second possibility involves ROBO3 binding to SLIT2 in a nonproductive interaction. In human, only ROBO3 Form B is known to bind to SLIT2 (9-11).

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. Yuan, S.-S. F. *et al.* (1999) *Dev. Biol.* **207**:62.
6. SwissProt. Accession # Q9Z2I4.
7. Bashaw, G.J. *et al.* (2000) *Cell* **101**:703.
8. Kidd, T. *et al.* (1998) *Cell* **92**:205.
9. Camurri, L. *et al.* (2005) *Mol. Cell. Neurosci.* **30**:485.
10. Sabatier, C. *et al.* (2004) *Cell* **117**:157.
11. Mambetisaeva, E.T. *et al.* (2005) *Dev. Dyn.* **233**:41.