

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Human ROBO3 (Leu40-Ser545) Accession # Q96MS0	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus

N-terminal Sequence	Leu40
Analysis	
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	82 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	95-120 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Biotinylated recombinant mouse Slit-3 captured on a streptavidin-coated plate at 1 µg/mL can bind Recombinant Human ROBO3 Fc Chimera with an apparent K _d <10 nM.
Endotoxin Level	<0.01 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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.

BACKGROUND

Human ROBO3 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). Human ROBO3 is a type I transmembrane glycoprotein that is synthesized as a 1386 amino acid (aa) precursor. It contains a 20 aa signal sequence, an 871 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 474 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). Human ROBO3 has multiple isoforms. An alternate start site generates a 1365 aa A isoform and a 1341 aa B isoform. These two mature forms differ only over the first 26 and 2 amino acids of the N-terminus, respectively. There are multiple point mutations and insertions in the ROBO3 gene. Three result in truncated forms. One is 456 aa in length and ends after the Ig-like domain #4. A second is 770 aa in length and ends in the third FN domain. A third isoform is truncated after aa 1108 in the cytoplasmic region after CC2. At least one alternate splice form is also reported. It shows a 10 aa substitution between aa 1025 - 1034, followed by truncation. Human ROBO3 ECD is 84% and 91% aa identical to the ECD in mouse and canine ROBO3, 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 ROBO1, blocking SLIT activation. A second possibility involves ROBO3 binding to SLIT2 in a nonproductive interaction. However, only ROBO3 Form B is known to bind to SLIT2 (9-11).

References:

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