

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Human ROBO4 (Gln28 - Arg467) Accession # Q8WZ75	IEGRMD	Human IgG ₁ (Pro100 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	No results obtained: Gln28 predicted		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	74 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	90-100 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When recombinant human ROBO4 Fc Chimera is immobilized at 5 µg/mL, biotinylated recombinant rat UNC5H2/Fc Chimera binds with an apparent $K_D < 20$ nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 400 µg/mL in 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.

BACKGROUND

ROBO4, also called magic roundabout, is a ~150 kDa glycoprotein belonging to the ROBO family (1). ROBOs are molecular guidance receptors that typically interact with Slit ligands to regulate axon guidance and neuronal migration (2). Unlike other family members, ROBO4 is mainly restricted to the vascular endothelium (1, 2). Expression in early hematopoietic progenitors is also reported (3). The human ROBO4 cDNA encodes 1012 amino acids (aa), including a 27 aa signal sequence, a 440 aa extracellular domain (ECD) containing two C2-type Ig domains and two fibronectin type III (FNIII) domains, a transmembrane domain and an intracellular domain. ROBO4 diverges from other ROBOs in the number of Ig, FNIII and cytoplasmic CC domains (1, 4). Within the ECD, human ROBO4 shares 80%, 80%, 87% and 88% aa identity with mouse, rat, bovine and canine ROBO4, respectively. Vascular endothelial ROBO4 is expressed at highest levels in during development and vascular remodeling, including tumor angiogenesis (1, 2, 4 - 6). It is proposed to contribute to vascular stability. Consistent with this, endogenous ROBO4 is concentrated in the vascular stalk and sprouts rather than tip cells and appears to protect newly formed blood vessels against VEGF-induced vascular leak (6 - 9). ROBO4 binding of Slit proteins has been variably reported, and when detected may be mediated by ROBO4/ROBO1 heterodimers (2, 4 - 7, 9 - 13). ROBO4 is also variably reported to stimulate or inhibit cell migration or filopodia formation (2, 4 - 13). Effects on cell movement may be mediated through intracellular binding of WASP-, Ras/Rac/Rho-, Mena-, Src- or Paxillin-related proteins, all of which affect the cytoskeleton (5 - 7, 10 - 12). Recombinant soluble ROBO4 ECD can antagonize endothelial cell migration and *in vivo* angiogenesis (13). R&D Systems quality control testing of the ROBO4 ECD has demonstrated high-affinity binding of the Netrin receptor UNC5H2 (UNC5B).

References:

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