Datasheet for ABIN7581953

anti-ROBO3 antibody (Extracellular)

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Overview

Quantity:	50 µL
Target:	ROBO3
Binding Specificity:	AA 656-670, Extracellular
Reactivity:	Mouse
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This ROBO3 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), Flow Cytometry (FACS), Live Cell Imaging (LCI)

Product Details

Purpose:	A Rabbit Polyclonal antibody to Robo3 (extracellular)
Immunogen:	(C)RPAEDPWKGQRGLAE, corresponding to amino acid residues 656 - 670 of mouse Robo3
Sequence:	(C)RPAEDPWKGQ RGLAE
Isotype:	IgG
Specificity:	Extracellular, N-terminus.
Predicted Reactivity:	Rat - 13 out of 15 amino acid residues identical Human - 12 out of 15 amino acid residues identical
Characteristics:	Anti-Robo3 (extracellular) Antibody (ABIN7581953) is a highly specific antibody directed against an extracellular epitope of the mouse protein. The antibody can be used in western blot,

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	immunohistochemistry and flow cytometry applications. It has been designed to recognize Robo3 from mouse, rat and human samples.
Purification:	Affinity purified on immobilized antigen.

Target Details

Target:	ROBO3
Alternative Name:	ROBO3 (ROBO3 Products)
Background:	Roundabout Homolog 3, Roundabout Guidance Receptor 3, Retinoblastoma-inhibiting gene 1 protein, RIG1,Robo3 (also known as Roundabout Homolog 3, Roundabout Guidance Receptor 3, Retinoblastoma-inhibiting gene 1 protein, RIG1) is a transmembrane receptor belonging to the immunoglobulin superfamily (IgSF).IgSF proteins comprise multiple extracellular immunoglobulin-like (Ig) domains and multiple fibronectin III-like (FnIII) domains that allow them to mediate protein-protein interactions. IgSF proteins are either secreted or localized to the cell surface.1 IgSF is divided into subgroups, including the Robo family proteins, which comprise Robo 1, -2, -3 and -4. The Robo family are single-pass transmembrane proteins with an extracellular domain composed of five Ig domains and three FnIII repeats, followed by a cytoplasmic domain containing 3-4 conserved motifs (CC). The Robo family proteins are mainly implicated in axon guidance and are necessary for neurodevelopment.Robo3 is a master regulator of midline crossing in vertebrates. Although it shares some of its features with other proteins of the Robo family, Robo3 displays unique features. While Robo1 and Robo2 function as classical Slit receptors, Robo3 does not bind Slits and instead acts as a negative regulator of Robo1/2-mediated Slit repulsion. Robo3 also binds NELL2 which mediates axon repulsion, and indirectly boosts axon attraction to Netrin-1 without interacting with Netrin-1 itself. In commissural neurons, Robo3 exists in two splice isoforms that differ at the C-termini of their intracellular domains: Robo3.1 is expressed before midline crossing, and Robo3.2 is expressed in postcrossing axons. Robo3.1 prevents precocious midline repulsion by antagonizing the function of Robo1 and -2. It does so by preventing premature Slit repulsion from the floor plate, indirectly promoting Netrin-1-induced growth to the midline, and mediating NELL2 repulsion from the ventral horn. By contrast, the Robo3.2 isoform, like Robo1 and -2, promotes repulsion away from the midline once growth cones have crossed to the contralateral side. Robo3 expression is tightly regulated at different levels including transcriptional and translational regulation. It is transiently expressed by commissural axons before they cross the midline, and rapidly down-regulated shortly after crossing.NELL2 is a secreted glycoprotein containing a laminin G-like (LamG) domain, a coiled coil (CC) domain, and six epidermal growth factor-like

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	(EGF) domains, flanked by five von Willebrand factor type C (VWC) domains. The interaction between NELL2 and Robo3 maps to the EGF domains in NELL2 and the FN domains in Robo3. In addition to commissural axon guidance, NELL2 controls retinal ganglion cell wiring, and is expressed in various regions of the developing nervous system. The additional mammalian NELL family member, NELL1, also binds Robo3, but it is not expressed in the spinal cord and has no repulsive activity for commissural axons. Instead, NELL1 has been implicated in osteogenesis. NELLs bind Robo3, but they do not strongly interact with Robo1/2. 2,3In Robo3 knockout mice, all commissural axons fail to reach the floor plate and instead project through the ipsilateral ventral horn. In addition, the absence of Robo3 reduces the number of cortical interneurons in mice. In Alzheimer's disease model mice, Robo3 expression was significantly down-regulated.4 The role of Robo3 in midline guidance is also conserved in humans. Midline crossing defects have been seen in patients with Robo3 mutations, who exhibit Horizontal Gaze Palsy with Progressive Scoliosis (HGPPS).3
Gene ID:	19649
UniProt:	Q9Z2I4

Application Details

Application Notes:	Antigen preadsorption control: 1 µg peptide per 1 µg antibody Application Dilutions Immunohistochemistry paraffin embedded sections ihc: 1:300 Application Dilutions Western blot wb: 1:200
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Reconstitution:	0.2 mL double distilled water (DDW).
Concentration:	1 mg/mL
Buffer:	PBS pH 7.4
Storage:	4 °C,-20 °C
Storage Comment:	Storage before reconstitution: The antibody ships as a lyophilized powder at room temperature. Upon arrival, it should be stored at -20°C. Storage after reconstitution: The reconstituted solution can be stored at 4°C for up to 1 week. For longer periods, small aliquots should be stored at -20°C. Avoid multiple freezing and

thawing. Centrifuge all antibody preparations before use (10000 x g 5 min).