

**BACKGROUND**

Specialized cells at the midline, which separates the left and right halves of the CNS, have a number of roles in directing growth cone behavior. In the vertebrate spinal cord, the insect ventral nerve cord and *C. elegans*, midline cells produce guidance cues such as Nectins and Slit, which act as attractants and repellents, respectively. These cells may act as gatekeepers to prevent axons from crossing the midline and to induce a switch in growth cone responsiveness to guidance cues beyond the gateway. One such gatekeeper, robo, is an axon guidance receptor that defines a novel subfamily of Ig superfamily proteins that are conserved from fruit flies to mammals. Robo acts as a receptor for the repellent Slit and functions in a cell-autonomous fashion. Non-crossing axons express high levels of robo, whereas crossing axons express low levels of robo before reaching the midline and high levels after they cross. Robo1 and robo2 are two human homologs of the *Drosophila* protein roundabout. Robo1 is also homologous to the *C. elegans* gene sax3, whereas robo2 is homologous to the zebrafish gene astray.

**REFERENCES**

- Kidd, T., et al. 1998. Roundabout controls axon crossing of the CNS midline and defines a novel subfamily of evolutionarily conserved guidance receptors. *Cell* 92: 205-215.
- Zallen, J.A., et al. 1998. The conserved immunoglobulin superfamily member SAX-3/robo directs multiple aspects of axon guidance in *C. elegans*. *Cell* 92: 217-227.

**CHROMOSOMAL LOCATION**

Genetic locus: ROBO2 (human) mapping to 3p12.3; Robo2 (mouse) mapping to 16 C3.1.

**SOURCE**

robo2 (A-10) is a mouse monoclonal antibody raised against amino acids 1281-1380 within a C-terminal cytoplasmic domain of robo2 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

robo2 (A-10) is available conjugated to agarose (sc-376177 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376177 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376177 PE), fluorescein (sc-376177 FITC), Alexa Fluor® 488 (sc-376177 AF488), Alexa Fluor® 546 (sc-376177 AF546), Alexa Fluor® 594 (sc-376177 AF594) or Alexa Fluor® 647 (sc-376177 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376177 AF680) or Alexa Fluor® 790 (sc-376177 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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**STORAGE**

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

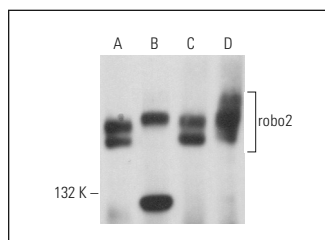
**APPLICATIONS**

robo2 (A-10) is recommended for detection of robo2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

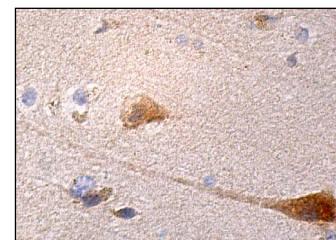
Suitable for use as control antibody for robo2 siRNA (h): sc-42254, robo2 siRNA (m): sc-42255, robo2 shRNA Plasmid (h): sc-42254-SH, robo2 shRNA Plasmid (m): sc-42255-SH, robo2 shRNA (h) Lentiviral Particles: sc-42254-V and robo2 shRNA (m) Lentiviral Particles: sc-42255-V.

Molecular Weight of robo2: 172 kDa.

Positive Controls: F9 cell lysate: sc-2245, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

**DATA**

robo2 (A-10): sc-376177. Western blot analysis of robo2 expression in F9 whole cell lysate (A) and human brain (B), mouse brain (C) and rat brain (D) tissue extracts.



robo2 (A-10): sc-376177. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal cells.

**SELECT PRODUCT CITATIONS**

- Taroc, E.Z.M., et al. 2017. The terminal nerve plays a prominent role in GnRH-1 neuronal migration independent from proper olfactory and vomeronasal connections to the olfactory bulbs. *Biol. Open* 6: 1552-1568.
- Kandilya, D., et al. 2020. High glucose alters the DNA methylation pattern of neurodevelopment associated genes in human neural progenitor cells *in vitro*. *Sci. Rep.* 10: 15676.
- Liu, T., et al. 2021. Soluble TREM-1, as a new ligand for the membrane receptor robo2, promotes hepatic stellate cells activation and liver fibrosis. *J. Cell. Mol. Med.* 25: 11113-11127.
- Suvarna, K., et al. 2022. Slit2 signaling stimulates Ewing sarcoma growth. *Genes Cancer* 13: 88-99.
- Lin, J.M., et al. 2022. Sociosexual behavior requires both activating and repressive roles of Tfap2e/AP-2ε in vomeronasal sensory neurons. *Elife* 11: e77259.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.