



UNC-40 (cC-18): sc-27067

BACKGROUND

Unc-40, a homolog of the cell surface proteins DCC (deleted in colorectal cancer) and neogenin, is expressed on motile cells and pioneer axons. Migrating axons require the correct presentation of guidance molecules to find their target. Three known genes guide circumferential migrations of pioneer axons and mesodermal cells on the nematode body wall. Unc-5 affects dorsal migrations, Unc-40 primarily affects ventral migrations, and Unc-6 affects migrations in both directions. The bilateral *C. elegans* neuroblasts QL and QR are born in the same anterior/posterior position, but polarize and migrate left/right asymmetrically. Unc-40/netrin receptor and the transmembrane protein DPY-19 are required to orient QL and QR cells correctly. These proteins, in addition to Trio/GTPase exchange factor homolog, participate in a signaling system that orients and polarizes migrating cells in a left/right asymmetrical fashion during development. The netrin 1 receptor DCC and its *C. elegans* homolog UNC-40 direct the guidance of axons toward netrin sources. Although UNC-40 and UNC-34 work together with sax-3 in several genetic pathways determining guidance decisions, they act cell-autonomously within the migrating neuron.

REFERENCES

- Hedgecock, E. M., Culotti, J. G., Hall, D. H. 1990. The unc-5, unc-6, and unc-40 genes guide circumferential migrations of pioneer axons and mesodermal cells on the epidermis in *C. elegans*. *Neuron* 90: 61-85.
- Chan, S. S., Zheng, H., Su, M. W., Wil, R., Killeen, M. T., Hedgecock, E. M., Culotti, J. G. 1996. UNC-40, a *C. elegans* homolog of DCC (deleted in colorectal cancer), is required in motile cells responding to UNC-6 netrin cues. *Cell* 2: 187-195.
- Honigberg, L., Kenyon, C. 2000. Establishment of left/right asymmetry in neuroblast migration by UNC-40/DCC, UNC-73/Trio and DPY-19 proteins in *C. elegans*. *Development* 21: 4655-4668.
- Finger, J. H., Bronson, R. T., Harris, B., Johnson, K., Przyborski, S. A., Ackerman, S. L. 2002. The netrin 1 receptors UNC5h3 and DCC are necessary at multiple choice points for the guidance of corticospinal tract axons. *J. Neurosci.* 23: 10346-103556.
- Yu, T. W., Hao, J. C., Lim, W., Tessier-Lavigne, M., Bargmann, C. I. 2002. Shared receptors in axon guidance: Sax-3/Robo signals via UNC-34/enabled and a netrin-independent UNC-40/DCC function. *Nat. Neurosci.* 11: 1147-1154.

SOURCE

UNC-40 (cC-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of UNC-40 of *C. elegans* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27067 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UNC-40 (cC-18) is recommended for detection of UNC-40 of *Caenorhabditis elegans* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.