

PAR-3 (cF-20): sc-9261

BACKGROUND

Cell proliferation and development are carefully controlled in *C. elegans*, with each cell following a nearly invariant pattern of differentiation. Vulval development in particular provides a useful model for studying how cell fate is determined. In addition to cell signaling pathways such as Notch and Ras pathways, the establishment of cell polarity and the asymmetric distribution of certain receptors are also critical for proper cell fate determination. In *C. elegans*, PAR proteins are required for early asymmetrical divisions that establish embryonic polarity, and are asymmetrically localized in early blastomeres. PAR-2 and PAR-3 function in early embryogenesis to ensure an asymmetric first cleavage and the segregation of cytoplasmic factors.

REFERENCES

1. Kemphues, K.J., Priess, J.R., Morton, D.G. and Cheng, N.S. 1988. Identification of genes required for cytoplasmic localization in early *C. elegans* embryos. *Cell* 52: 311-320.
2. Kirby, C., Kusch, M. and Kemphues, K. 1990. Mutations in the par genes of *Caenorhabditis elegans* affect cytoplasmic reorganization during the first cell cycle. *Dev. Biol.* 142: 203-215.
3. Levitan, D.J., Boyd, L., Mello, C.C., Kemphues, K.J. and Stinchcomb, D.T. 1994. par-2, a gene required for blastomere asymmetry in *Caenorhabditis elegans*, encodes zinc-finger and ATP-binding motifs. *Proc. Natl. Acad. Sci. USA* 91: 6108-6112.
4. Etemad-Moghadam, B., Guo, S. and Kemphues, K.J. 1995. Asymmetrically distributed par-3 protein contributes to cell polarity and spindle alignment in early *C. elegans* embryos. *Cell* 83: 743-752.
5. Sundaram, M. and Han, M. 1996. Control and integration of cell signaling pathways during *C. elegans* vulval development. *Bioessays* 18: 473-480.
6. Sommer, R.J. and Sternberg, P.W. 1996. Evolution of nematode vulval fate patterning. *Dev. Biol.* 173: 396-407.
7. Kornfeld, K. 1997. Vulval development in *Caenorhabditis elegans*. *Trends Genet.* 13: 55-61.

SOURCE

PAR-3 (cF-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PAR-3 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-9261 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

PAR-3 (cF-20) is recommended for detection of PAR-3 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).

Molecular Weight of PAR-3: 43 kDa.

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.

PROTOCOLS

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