



## BAR-1 (cC-17): sc-9264

### 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. Cell signaling pathways such as Notch and Ras pathways are critical for proper cell fate determination. LET-60, a member of the *C. elegans* Ras superfamily, coordinates with BAR-1, the  $\beta$ -catenin homologue, and acts as a switch between vulval and hypodermal cell fates during the inductive signaling pathway that initiates vulva formation. LET-23 is a tyrosine kinase receptor required for the induction of the *C. elegans* vulva, survival past the L1 stage, hermaphrodite fertility and male spicule development. LET-23 is the homolog of the EGFR in *C. elegans*, and is preferentially localized to the basolateral membranes of the six vulval precursor cells. EGL-15 encodes a receptor tyrosine kinase of the fibroblast growth factor receptor (FGFR) subfamily and is required for the normal cell migrations of the sex myoblasts in *C. elegans*.

### REFERENCES

1. Beitel, G.J., Clark, S.G., and Horvitz, H.R. 1990. *Caenorhabditis elegans* Ras gene LET-60 acts as a switch in the pathway of vulval induction. *Nature* 348: 503-509.
2. DeVore, D.L., Horvitz, H.R., and Stern, M.J. 1995. An FGF receptor signaling pathway is required for the normal cell migrations of the sex myoblasts in *C. elegans* hermaphrodites. *Cell* 83: 611-620.
3. Sakai, T., Koga, M., and Ohshima, Y. 1996. Genomic structure and 5' regulatory regions of the LET-23 gene in the nematode *C. elegans*. *J. Mol. Biol.* 256: 548-555.
4. Sundaram, M. and Han, M. 1996. Control and integration of cell signaling pathways during *C. elegans* vulval development. *Bioessays* 18: 473-480.
5. Sommer, R.J. and Sternberg, P.W. 1996. Evolution of nematode vulval fate patterning. *Dev. Biol.* 173: 396-407.
6. Kornfeld, K. 1997. Vulval development in *Caenorhabditis elegans*. *Trends Genet.* 13: 55-61.
7. Eisenmann, D.M., Maloof, J.N., Simske, J.S., Kenyon, C., and Kim, S.K. 1998. The  $\beta$ -catenin homologue BAR-1 and LET-60 RAS coordinately regulate the HOX gene LIN-39 during *Caenorhabditis elegans* vulval development. *Development* 125: 3667-3680.
8. Kaech, S.M., Whitfield, C.W., and Kim, S.K. 1998. The LIN-2/LIN-7/LIN-10 complex mediates basolateral membrane localization of the *C. elegans* EGF receptor LET-23 in vulval epithelial cells. *Cell* 94: 761-771.

### SOURCE

BAR-1 (cC-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of BAR-1 of *C. elegans* origin.

### STORAGE

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

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9264 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

BAR-1 (cC-17) is recommended for detection of BAR-1 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.

### SELECT PRODUCT CITATIONS

1. Jay, P.Y., Bielinska, M., Erlich, J.M., Mannisto, S., Pu, W.T., Heikinheimo, M. and Wilson, D.B. 2007. Impaired mesenchymal cell function in GATA-4 mutant mice leads to diaphragmatic hernias and primary lung defects. *Dev. Biol.* 301: 602-614.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.