SANTA CRUZ BIOTECHNOLOGY, INC.

# POP-1 (cC-17): sc-15512

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

In *C. elegans* embryogenesis, POP-1 is essential for the specification of the blastomere, where it functions to link anterior-posterior cell divisions with cell fate decisions. Differences in POP-1 expression between anterior and posterior cells suggest that POP-1 aids in determining the polarity of the blastomere. The β-catenin homolog WRM-1 downregulates levels of POP-1 in the posterior daughter of the EMS blastomere. POP-1 and BAR form a bipartite transcription factor that activates expression of Wnt target genes associated with controlling cell polarization and cell migration. A polarizing signal induces endoderm production by the 4-cell stage blastomere. The genes mom-1 through mom-5 are required for the EMS to produce endoderm. The genes mom-1 through mom-3 are required in the signaling cell, P2, while mom-4 is required in EMS. Mom-4 is expressed as a MAP kinase kinase kinase-related protein that stimulates the WRM-1/LIT-1-dependent phosphorylation of POP-1. Along with WRM-1, the Mom-4 protein downregulates the HMG-domain-containing repressor POP-1.

## REFERENCES


1. Lin, R., Thompson, S. and Priess, J.R. 1995. Pop-1 encodes an HMG box protein required for the specification of a mesoderm precursor in early *C. elegans* embryos. Cell 83: 599-609.
2. Thorpe, C.J., Schlesinger, A., Carter, J.C. and Bowerman, B. 1997. Wnt signaling polarizes an early *C. elegans* blastomere to distinguish endoderm from mesoderm. Cell 90: 695-705.
3. Lin, R., Hill, R.J. and Priess, J.R. 1998. POP-1 and anterior-posterior fate decisions in *C. elegans* embryos. Cell 92: 229-239.
4. Shin, T.H., Yasuda, J., Rocheleau, C.E., Lin, R., Soto, M., Bei, Y., Davis, R.J. and Mello, C.C. 1999. MOM-4, a MAP kinase kinase kinase-related protein, activates WRM-1/LIT-1 kinase to transduce anterior/posterior polarity signals in *C. elegans*. Mol. Cell 4: 275-280.
5. Meneghini, M.D., Ishitani, T., Carter, J.C., Hisamoto, N., Ninomiya-Tsuji, J., Thorpe, C.J., Hamill, D.R., Matsumoto, K. and Bowerman, B. 1999. MAP kinase and Wnt pathways converge to downregulate an HMG-domain repressor in *Caenorhabditis elegans*. Nature 399: 793-797.
6. Korswagen, H.C., Herman, M.A. and Clevers, H.C. 2000. Distinct beta-catenins mediate adhesion and signalling functions in *C. elegans*. Nature 406: 527-532.
7. Herman, M. 2001. *C. elegans* POP-1/TCF functions in a canonical Wnt pathway that controls cell migration and in a noncanonical Wnt pathway that controls cell polarity. Development 128: 581-590.


## SOURCE

POP-1 (cC-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of POP-1 of *Caenorhabditis 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 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15512 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

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

## 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.