SANTA CRUZ BIOTECHNOLOGY, INC.

FEM-2 (cN-17): sc-15534

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Apoptosis is an evolutionarily conserved process that is essential for tissue homeostasis and development including sex determination. Male sexual development in the nematode *C. elegans* requires the genes FEM-1, FEM-2 and FEM-3. The FEM proteins are components of a novel signal transduction pathway. FEM-1, a gene required for sex determination in both germline and somatic tissues in *C. elegans*, encodes a soluble, intracellular protein of 656 amino acids. FEM-2 is related in sequence to protein serine/threonine phosphatases of type 2C (PP2C). FEM-2 exhibits magnesium-dependent casein phosphatase activity and associates with FEM-3 *in vitro,* suggesting that protein phosphorylation regulates sex determination. The gene FEM-2 plays a role in regulating a pathway transducing a non-cell-autonomous signal to a nuclear transcription factor. Both maternal and zygotic FEM-3 activities are required for spermatogenesis in the XX hermaphrodite germline and for male development in somatic and germline tissues of XO (male) animals. The embryonic FEM-3 RNA contributes to embryos as a maternal product and its RNA is degraded early in embryonic development. Sex-specific regulation of maternal FEM-3 activity occurs post-transcriptionally.

REFERENCES

1. Spence, A.M., et al. 1990. The product of FEM-1, a nematode sex-determining gene, contains a motif found in cell cycle control proteins and receptors for cell-cell interactions. Cell 60: 981-990.
2. Ahringer, J., et al. 1992. The *Caenorhabditis elegans* sex determining gene FEM-3 is regulated post-transcriptionally. EMBO J. 11: 2303-2310.
3. Pilgrim, D., et al. 1995. The *C. elegans* sex-determining gene from FEM-2 encodes a putative protein phosphatase. Mol. Biol. Cell 6: 1159-1171.
4. Chin-Sang, I.D., et al. 1996. *Caenorhabditis elegans* sex-determining protein FEM-2 is a protein phosphatase that promotes male development and interacts directly with FEM-3. Genes Dev. 10: 2314-2325.
5. Chan S.L., et al. 1999. F1Aa, a death receptor-binding protein homologous to the *Caenorhabditis elegans* sex-determining protein, FEM-1, is a caspase substrate that mediates apoptosis. J. Biol. Chem. 274: 32461-32468.

SOURCE

FEM-2 (cN-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of FEM-2 of *Caenorhabditis 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-15534 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.

APPLICATIONS

FEM-2 (cN-17) is recommended for detection of FEM-2 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.