

## FEM-3 (cN-19): sc-15537

### 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 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-3 (cN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of FEM-3 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-15537 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-3 (cN-19) is recommended for detection of FEM-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).

### 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. Rodriguez, A., et al. 2007. Expression studies of neogenin and its ligand hemojuvelin in mouse tissues. *J. Histochem. Cytochem.* 55: 85-96.
2. Metzger, M., et al. 2007. RGMa inhibits neurite outgrowth of neuronal progenitors from murine enteric nervous system via the neogenin receptor *in vitro*. *J. Neurochem.* 103: 2665-2678.
3. Andrusiak, M.G., et al. 2011. Rb/E2F regulates expression of neogenin during neuronal migration. *Mol. Cell. Biol.* 31: 238-247.

### 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.