SANTA CRUZ BIOTECHNOLOGY, INC.

DAF-12 (cE-18): sc-12196

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Several proteins involved in regulating the aging process in *C. elegans* have been identified. DAF-2, DAF-12, DAF-16, and AGE-1 (also known as DAF-23) regulate lifespan via an Insulin-signaling pathway. Specifically, decreases in DAF-2 signaling induce metabolic and developmental changes, as in mammalian metabolic control by the Insulin receptor. DAF-12 regulates the developmental stage transitions of larval diapause, developmental age, and adult longevity. DAF-16 encodes a member of the hepatocyte nuclear factor 3 (HNF-3)/forkhead family of transcriptional regulators. AGE-1 is a homologue of mammalian phosphatidylinositol-3-OH kinase (PI(3)K) catalytic subunits and is required for non-dauer development and normal senescence. CLK-1, a homolog of the yeast COQ7/CAT5 protein, is thought to exert its effects on longevity via the synthesis of ubiquinone, an essential component of electron transport. Mortal germline (MRT) checkpoint protein, MRT-2, is required for germline immortality and telomere replication.

REFERENCES

1. Wilson, R., Ainscough, R., Anderson, K., Baynes, C., Berks, M., Bonfield, J., Burton, J., Connell, M., Copsey, T., Cooper, J., et al. 1994. 2.2 Mb of contiguous nucleotide sequence from chromosome III of *C. elegans*. Nature 368: 32-38.
2. Morris, J.Z., Tissenbaum, H.A. and Ruvkun, G. 1996. A phosphatidylinositol-3-OH kinase family member regulating longevity and diapause in *Caenorhabditis elegans*. Nature 382: 536-539.
3. Ewbank, J.J., Barnes, T.M., Lakowski, B., Lussier, M., Bussey, H. and Hekimi, S. 1997. Structural and functional conservation of the *Caenorhabditis elegans* timing gene CLK-1. Science 275: 980-983.
4. Kimura, K.D., Tissenbaum, H.A., Liu, Y. and Ruvkun, G. 1997. DAF-2, an Insulin receptor-like gene that regulates longevity and diapause in *Caenorhabditis elegans*. Science 277: 942-946.
5. Lin, K., Dorman, J.B., Rodan, A. and Kenyon, C. 1997. DAF-16: An HNF-3/forkhead family member that can function to double the life-span of *Caenorhabditis elegans*. Science 278:1319-1322.
6. Vajo, Z., King, L.M., Jonassen, T., Wilkin, D.J., Ho, N., Munnich, A., Clarke, C.F. and Francomano, C.A. 1999. Conservation of the *Caenorhabditis elegans* timing gene CLK-1 from yeast to human: a gene required for ubiquinone biosynthesis with potential implications for aging. Mamm. Genome 10: 1000-1004.
7. Moeslein, F.M., Myers, M.P. and Landreth, G.E. 1999. The CLK family kinases, CLK-1 and CLK-2, phosphorylate and activate the tyrosine phosphatase, PTP-1B. J. Biol. Chem. 274: 26697-26704.
8. Ahmed, S. and Hodgkin, J. 2000. MRT-2 checkpoint protein is required for germline immortality and telomere replication in *C. elegans*. Nature 403: 159-164.
9. Antebi, A., Yeh, W.H., Tait, D., Hedgecock, E.M. and Riddle, D.L. 2000. DAF-12 encodes a nuclear receptor that regulates the dauer diapause and developmental age in *C. elegans*. Genes Dev. 14: 1512-1527.

SOURCE

DAF-12 (cE-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DAF-12 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-12196 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DAF-12 (cE-18) is recommended for detection of DAF-12 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. Dinkova, T.D., Keiper, B.D., Korneeva, N.L., Aamodt, E.J. and Rhoads, R.E. 2005. Translation of a small subset of *Caenorhabditis elegans* mRNAs is dependent on a specific eukaryotic translation initiation factor 4E isoform. Mol. Cell. Biol. 25: 100-113.

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.

PROTOCOLS

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