SANTA CRUZ BIOTECHNOLOGY, INC.

FEN-1 (N-17): sc-8794

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA replication, recombination and repair, all of which are necessary for genome stability, require the presence of exonucleases. In DNA replication, these enzymes are involved in the processing of Okazaki fragments, whereas in DNA repair, they function to excise damaged DNA fragments and correct recombinational mismatches. FEN-1 (for flap endonuclease) is an endonuclease that specifically cleaves the 5' flap structure of DNA in the process of DNA repair. FEN-1 is highly homologous to yeast Rad2. The C-terminal region of FEN-1 may bind to PCNA, thus allowing FEN-1 to function as an exonuclease in DNA replication.

REFERENCES

1. Goulian, M., et al. 1990. Discontinuous DNA synthesis by purified mammalian proteins. J. Biol. Chem. 265: 18461-18471.
2. Waga, S., et al. 1994. Reconstitution of complete SV40 DNA replication with purified replication factors. J. Biol. Chem. 269: 10923-10934.
3. Harrington, J.J., et al. 1994. Functional domains within FEN-1 and Rad2 define a family of structure-specific endonucleases: implications for nucleotide excision repair. Genes Dev. 8: 1344-1355.
4. Johnson, R.E., et al. 1995. Requirement of the yeast RTH1 5' to 3' exonuclease for the stability of simple repetitive DNA. Science 269: 238-240.
5. Sommers, C.H., et al. 1995. Conditional lethality of null mutations in RTH1 that encodes the yeast counterpart of a mammalian 5'- to 3'-exonuclease required for lagging strand DNA synthesis in reconstituted systems. J. Biol. Chem. 270: 4193-4196.

CHROMOSOMAL LOCATION

Genetic locus: FEN1 (human) mapping to 11q12.2; Fen1 (mouse) mapping to 19 A.

SOURCE

FEN-1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of FEN-1 of human 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-8794 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.

PROTOCOLS

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

APPLICATIONS

FEN-1 (N-17) is recommended for detection of FEN-1 of mouse, rat and human 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).

FEN-1 (N-17) is also recommended for detection of FEN-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for FEN-1 siRNA (h): sc-37795, FEN-1 siRNA (m): sc-37796, FEN-1 shRNA Plasmid (h): sc-37795-SH, FEN-1 shRNA Plasmid (m): sc-37796-SH, FEN-1 shRNA (h) Lentiviral Particles: sc-37795-V and FEN-1 shRNA (m) Lentiviral Particles: sc-37796-V.

Molecular Weight of FEN-1: 42 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat nuclear extract: sc-2132 or NIH/3T3 nuclear extract: sc-2138.

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. Vispe, S., et al. 2003. Double-strand DNA break formation mediated by flap endonuclease-1. J. Biol. Chem. 278: 35279-35285.
2. Spiro, C., et al. 2003. Nuclease-deficient FEN-1 blocks Rad51/BRCA1-mediated repair and causes trinucleotide repeat instability. Mol. Cell. Biol. 23: 6063-6074.
3. Shi, B.S., et al. 2004. N-methyl-N'-nitro-N-nitrosoguanidine sensitivity, mutator phenotype and sequence specificity of spontaneous mutagenesis in FEN-1-deficient cells. Mutat. Res. 556: 1-9.
4. Lan, L., et al. 2014. Novel method for site-specific induction of oxidative DNA damage reveals differences in recruitment of repair proteins to heterochromatin and euchromatin. Nucleic Acids Res. 42: 2330-2345.

RESEARCH USE

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