SANTA CRUZ BIOTECHNOLOGY, INC.

FEN-1 (4E7): sc-56675

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. Erratum in: 1990. J. Biol. Chem. 265: 22569.
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.
6. Hiraoka, L.R., et al. 1995. Sequence of human FEN-1, a structure-specific endonuclease and chromosomal localization of the gene (FEN1) in mouse and human. Genomics 25: 220-225.
7. Hosfield, D.J., et al. 1998. Structure of the DNA repair and replication endonuclease and exonuclease FEN-1: coupling DNA and PCNA binding to FEN-1 activity. Cell 95: 135-146.

CHROMOSOMAL LOCATION

Genetic locus: FEN1 (human) mapping to 11q12.2.

SOURCE

FEN-1 (4E7) is a mouse monoclonal antibody raised against amino acids 1-380 of FEN-1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

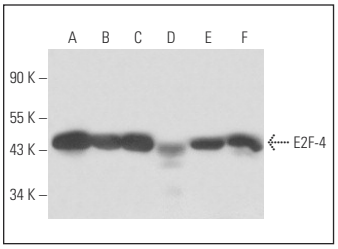
FEN-1 (4E7) is recommended for detection of FEN-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

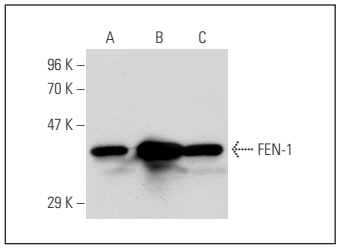
Molecular Weight of FEN-1: 42 kDa.

Positive Controls: FEN-1 (m): 293T Lysate: sc-120234, HeLa nuclear extract: sc-2120 or Jurkat nuclear extract: sc-2132.

DATA



FEN-1 (4E7): sc-56675. Western blot analysis of FEN-1 expression in HeLa (**A**), Jurkat (**B**), Y79 (**C**), A-431 (**D**), MCF7 (**E**) and U-937 (**F**) nuclear extracts.



FEN-1 (4E7): sc-56675. Western blot analysis of FEN-1 expression in non-transfected 293T: sc-117752 (**A**), mouse FEN-1 transfected 293T: sc-120234 (**B**) and HeLa (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhou, T., et al. 2016. R152C DNA Pol β mutation impairs base excision repair and induces cellular transformation. Oncotarget 7: 6902-6915.
2. Sun, H., et al. 2016. The FEN1 L209P mutation interferes with long-patch base excision repair and induces cellular transformation. Oncogene. 36:194-207.
3. Sun, L., et al. 2017. WRN is recruited to damaged telomeres via its RQC domain and tankyrase1-mediated poly-ADP-ribosylation of TRF1. Nucleic Acids Res. 45: 3844-3859.

RESEARCH USE

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

PROTOCOLS

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