SANTA CRUZ BIOTECHNOLOGY, INC.

FEN-1 (B-4): sc-28355

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.

CHROMOSOMAL LOCATION

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

SOURCE

FEN-1 (B-4) is a mouse monoclonal antibody raised against amino acids 81-380 of FEN-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FEN-1 (B-4) is available conjugated to agarose (sc-28355 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28355 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28355 PE), fluorescein (sc-28355 FITC), Alexa Fluor® 488 (sc-28355 AF488), Alexa Fluor® 546 (sc-28355 AF546), Alexa Fluor® 594 (sc-28355 AF594) or Alexa Fluor® 647 (sc-28355 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28355 AF680) or Alexa Fluor® 790 (sc-28355 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

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

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: U-2 OS cell lysate: sc-2295, Jurkat nuclear extract: sc-2132 or K-562 whole cell lysate: sc-2203.

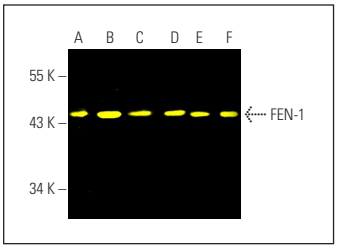
RESEARCH USE

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

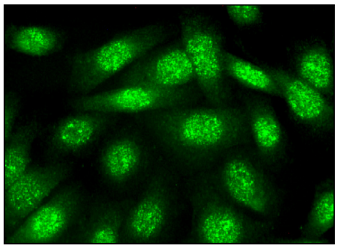
STORAGE

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

DATA



FEN-1 (B-4) Alexa Fluor® 488: sc-28355 AF488. Direct fluorescent western blot analysis of FEN-1 expression in U-2 OS (**A**), K-562 (**B**), NTERA-2 cl.D1 (**C**) and A-431 (**D**) whole cell lysates and MOLT-4 (**E**) and Jurkat (**F**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214.



FEN-1 (B-4): sc-28355. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Hosokawa, M., et al. 2007. Oncogenic role of KIAA0101 interacting with proliferating cell nuclear antigen in pancreatic cancer. Cancer Res. 67: 2568-2576.
2. López Castel, A., et al. 2009. CTG/CAG repeat instability is modulated by the levels of human DNA ligase I and its interaction with proliferating cell nuclear antigen: a distinction between replication and slipped-DNA repair. J. Biol. Chem. 284: 26631-26645.
3. Zhang, Y., et al. 2011. Different expression of alternative lengthening of telomere (ALT)-associated proteins/mRNAs in osteosarcoma cell lines. Oncol. Lett. 2: 1327-1332.
4. Che, J., et al. 2013. Overexpression of TOB1 confers radioprotection to bronchial epithelial cells through the MAPK/ERK pathway. Oncol. Rep. 30: 637-642.
5. Zeng, X., et al. 2017. FEN1 knockdown improves trastuzumab sensitivity in human epidermal growth factor 2-positive breast cancer cells. Exp. Ther. Med. 14: 3265-3272.
6. Collin, G., et al. 2018. Transcriptional repression of DNA repair genes is a hallmark and a cause of cellular senescence. Cell Death Dis. 9: 259.
7. Flach, K.D., et al. 2020. Endonuclease FEN1 coregulates ERα activity and provides a novel drug interface in tamoxifen resistant breast cancer. Cancer Res. 80: 1914-1926.
8. Park, S.H., et al. 2021. Timely termination of repair DNA synthesis by ATAD5 is important in oxidative DNA damage-induced single-strand break repair. Nucleic Acids Res. 49: 11746-11764.

PROTOCOLS

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