SANTA CRUZ BIOTECHNOLOGY, INC.

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



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 lgG_{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.

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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 μ g per 100-500 μ g 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.
- van Ravesteyn, T.W., et al. 2020. Extensive trimming of short single-stranded DNA oligonucleotides during replication-coupled gene editing in mammalian cells. PLoS Genet. 16: e1009041.
- Schilling, E.M., et al. 2021. Functional regulation of the structure-specific endonuclease FEN1 by the human cytomegalovirus protein IE1 suggests a role for the re-initiation of stalled viral replication forks. PLoS Pathog. 17: e1009460.
- 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.
- 5. Keane, S., et al. 2022. DLG2 impairs dsDNA break repair and maintains genome integrity in neuroblastoma. DNA Repair 112: 103302.
- Xian, H., et al. 2022. Oxidized DNA fragments exit mitochondria via mPTPand VDAC-dependent channels to activate NLRP3 inflammasome and interferon signaling. Immunity 55: 1370-1385.e8.
- Khatib, J.B., et al. 2024. PARP10 promotes the repair of nascent strand DNA gaps through RAD18 mediated translesion synthesis. Nat. Commun. 15: 6197.
- Lackner, A., et al. 2024. Small molecule inhibitor binds to NOD-like receptor family pyrin domain containing 3 and prevents inflammasome activation. iScience 27: 110459.

PROTOCOLS

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