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FEN1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2856C

Product Information

Application	WB, IF, E
Primary Accession	P39748
Other Accession	Q58DH8
Reactivity	Mouse, Rat, Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17639
Calculated MW	42593
Antigen Region	243-272

Additional Information

Gene ID	2237
Other Names	Flap endonuclease 1 {ECO:0000255|HAMAP-Rule:MF_03140}, FEN-1 {ECO:0000255|HAMAP-Rule:MF_03140}, 31--{ECO:0000255|HAMAP-Rule:MF_03140}, DNase IV, Flap structure-specific endonuclease 1 {ECO:0000255|HAMAP-Rule:MF_03140}, Maturation factor 1, MF1, hFEN-1, FEN1 {ECO:0000255|HAMAP-Rule:MF_03140}, RAD2
Target/Specificity	This FEN1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 243-272 amino acids from the Central region of human FEN1.
Dilution	WB~~1:1000 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	FEN1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FEN1 {ECO:0000255|HAMAP-Rule:MF_03140}

Synonyms	RAD2
Function	Structure-specific nuclease with 5'-flap endonuclease and 5'- 3' exonuclease activities involved in DNA replication and repair. During DNA replication, cleaves the 5'-overhanging flap structure that is generated by displacement synthesis when DNA polymerase encounters the 5'-end of a downstream Okazaki fragment. It enters the flap from the 5'-end and then tracks to cleave the flap base, leaving a nick for ligation. Also involved in the long patch base excision repair (LP-BER) pathway, by cleaving within the apurinic/apyrimidinic (AP) site- terminated flap. Acts as a genome stabilization factor that prevents flaps from equilibrating into structures that lead to duplications and deletions. Also possesses 5'-3' exonuclease activity on nicked or gapped double-stranded DNA, and exhibits RNase H activity. Also involved in replication and repair of rDNA and in repairing mitochondrial DNA.
Cellular Location	[Isoform 1]: Nucleus, nucleolus. Nucleus, nucleoplasm. Note=Resides mostly in the nucleoli and relocalizes to the nucleoplasm upon DNA damage

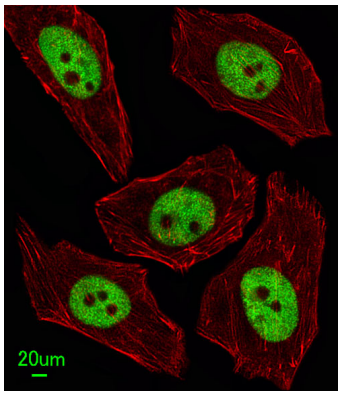
Background

FEN1 removes 5' overhanging flaps in DNA repair and processes the 5' ends of Okazaki fragments in lagging strand DNA synthesis. Direct physical interaction between this protein and AP endonuclease 1 during long-patch base excision repair provides coordinated loading of the proteins onto the substrate, thus passing the substrate from one enzyme to another. This protein is a member of the XPG/RAD2 endonuclease family and is one of ten proteins essential for cell-free DNA replication. DNA secondary structure can inhibit flap processing at certain trinucleotide repeats in a length-dependent manner by concealing the 5' end of the flap that is necessary for both binding and cleavage by the protein encoded by this gene. Therefore, secondary structure can deter the protective function of this protein, leading to site-specific trinucleotide expansions.

References

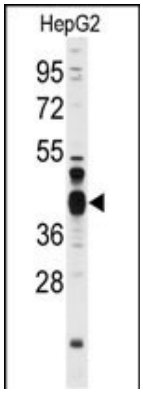
Hiraoka L.R., Harrington J.J., Gerhard D.S., Genomics 25:220-225(1995)
Robins P., Pappin D.J.C., Wood R.D., Lindahl T.J. Biol. Chem. 269:28535-28538(1994)
Gary R., Ludwig D.L., Cornelius H.L., MacInnes M.A.,J. Biol. Chem. 272:24522-24529(1997)

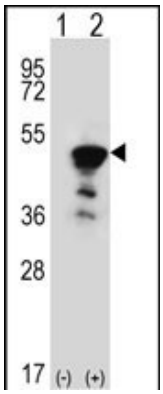
Images



Immunofluorescent analysis of U251 cells, using FEN1 Antibody (Center) (Cat. #AP2856c). AP2856c was diluted at 1:100 dilution. Alexa Fluor 488-conjugated goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue).

Western blot analysis of anti-FEN1 Antibody (Center) (Cat.#AP2856c) in HepG2 cell line lysates (35ug/lane). FEN1(arrow) was detected using the purified Pab.





Western blot analysis of FEN1 (arrow) using rabbit polyclonal FEN1 Antibody (Center) (Cat.#AP2856c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the FEN1 gene.