Flap endonuclease 1/FEN-1 Protein, Human (His, Myc)

Cat. No.:	HY-P700010
Synonyms:	rHuFlap endonuclease 1/FEN-1; Flap Endonuclease 1; FEN-1; DNase IV; Flap Structure-Specific Endonuclease 1; Maturation Factor 1; MF1; hFEN-1; FEN1; RAD2
Species:	Human
Source:	E. coli
Accession:	P39748 (M1-K380)
Gene ID:	2237
Molecular Weight:	Approximately 50.0 kDa

PROPERTIES

AA Sequence	MGIQGLAKLI ADVAPSAIRE NDIKSYFGRK VAIDASMSIY QFLIAVRQGG DVLQNEEGET TSHLMGMFYR TIRMMENGIK PVYVFDGKPP QLKSGELAKR SERRAEAEKQ LQQAQAAGAE QEVEKFTKRL VKVTKQHNDE CKHLLSLMGI PYLDAPSEAE ASCAALVKAG KVYAAATEDM DCLTFGSPVL MRHLTASEAK KLPIQEFHLS RILQELGLNQ EQFVDLCILL GSDYCESIRG IGPKRAVDLI QKHKSIEEIV RRLDPNKYPV PENWLHKEAH QLFLEPEVLD PESVELKWSE PNEEELIKFM CGEKQFSEER IRSGVKRLSK SRQGSTQGRL DDFFKVTGSL SSAKRKEPEP KGSTKKKAKT GAAGKFKRGK
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 10 mM Tris-HCl, 1mM EDTA, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Flap endonuclease 1 (FEN-1) is a structure-specific nuclease with dual enzymatic activities, functioning in both DNA

replication and repair processes. In DNA replication, FEN-1 plays a crucial role by cleaving the 5'-overhanging flap structure generated during displacement synthesis, allowing DNA polymerase to navigate the 5'-end of a downstream Okazaki fragment. It enters the flap from the 5'-end and tracks to cleave the flap base, creating a nick for subsequent ligation. Additionally, FEN-1 is integral to the long patch base excision repair (LP-BER) pathway, where it cleaves within the apurinic/apyrimidinic (AP) site-terminated flap. Acting as a genome stabilization factor, FEN-1 prevents the equilibration of flaps into structures that may lead to duplications or deletions. Furthermore, the protein exhibits 5'-3' exonuclease activity on nicked or gapped double-stranded DNA and possesses RNase H activity. FEN-1's versatile functions extend to replication and repair processes in rDNA and mitochondrial DNA.

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