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Datasheet for ABIN5709055

APEX1 Protein (AA 32-318) (His tag)

1 Image

Overview

Quantity:	100 µg
Target:	APEX1
Protein Characteristics:	AA 32-318
Origin:	Human
Source:	Escherichia coli (E. coli)
Protein Type:	Recombinant
Purification tag / Conjugate:	This APEX1 protein is labelled with His tag.
Application:	SDS-PAGE (SDS)

Product Details

Sequence: KNDKEAAGEG PALYEDPPDQ KTSPSGKPAT LKICSWNVDPG LRAWIKKKGL DWVKEEAPDI
LCLQETKCSE NKLPAELQEL PGLSHQYWSA PSDKEGYSGV GLLSRQCPLK VSYGIGDEEH
DQEGRVIVAE FDSFVLVTAY VPNAGRGLVR LEYRQRWDEA FRKFLKGLAS RKPLVLCGDL
NVAHEEIDLR NPKGNKKNAG FTPQERQGF G ELLQAVPLAD SFRHLYPNTP YAYTFWTYMM
NARSKNVGWR LDYFLLSHSL LPALCDSKIR SKALGSDHCP ITLYLAL

Purification: SDS-PAGE

Purity: > 90 %

Target Details

Target: APEX1

Alternative Name: APEX1 ([APEX1 Products](#))

Target Details

Background: Multifunctional protein that plays a central role in the cellular response to oxidative stress. The two major activities of APEX1 in DNA repair and redox regulation of transcriptional factors. Functions as a apurinic/aprimidinic (AP) endodeoxyribonuclease in the DNA base excision repair (BER) pathway of DNA lesions induced by oxidative and alkylating agents. Initiates repair of AP sites in DNA by catalyzing hydrolytic incision of the phosphodiester backbone immediately adjacent to the damage, generating a single-strand break with 5'-deoxyribose phosphate and 3'-hydroxyl ends. Does also incise at AP sites in the DNA strand of DNA/RNA hybrids, single-stranded DNA regions of R-loop structures, and single-stranded RNA molecules. Has a 3'-5' exoribonuclease activity on mismatched deoxyribonucleotides at the 3' termini of nicked or gapped DNA molecules during short-patch BER. Possesses a DNA 3' phosphodiesterase activity capable of roving lesions (such as phosphoglycolate) blocking the 3' side of DNA strand breaks. May also play a role in the epigenetic regulation of gene expression by participating in DNA deethylation. Acts as a loading factor for POLB onto non-incised AP sites in DNA and stimulates the 5'-terminal deoxyribose 5'-phosphate (dRp) excision activity of POLB. Plays a role in the protection from granzymes-mediated cellular repair leading to cell death. Also involved in the DNA cleavage step of class switch recombination (CSR). On the other hand, APEX1 also exerts reversible nuclear redox activity to regulate DNA binding affinity and transcriptional activity of transcriptional factors by controlling the redox status of their DNA-binding domain, such as the FOS/JUN AP-1 complex after exposure to IR. Involved in calcium-dependent down-regulation of parathyroid hormone (PTH) expression by binding to negative calcium response elements (nCaREs). Together with HNRNPL or the dimer XRCC5/XRCC6, associates with nCaRE, acting as an activator of transcriptional repression. Stimulates the YBX1-mediated MDR1 promoter activity, when acetylated at Lys-6 and Lys-7, leading to drug resistance. Acts also as an endoribonuclease involved in the control of single-stranded RNA metabolism. Plays a role in regulating MYC mRNA turnover by preferentially cleaving in between UA and CA dinucleotides of the MYC coding region determinant (CRD). In association with NMD1, plays a role in the rRNA quality control process during cell cycle progression. Associates, together with YBX1, on the MDR1 promoter. Together with NPM1, associates with rRNA. Binds DNA and RNA

Molecular Weight: 36.3 kDa

UniProt: [P27695](#)

Pathways: [DNA Damage Repair](#), [Chromatin Binding](#), [Cell RedoxHomeostasis](#), [Smooth Muscle Cell Migration](#), [Positive Regulation of Response to DNA Damage Stimulus](#)

Application Details

Application Notes: Optimal working dilution should be determined by the investigator.

Restrictions: For Research Use only

Handling

Format: Liquid

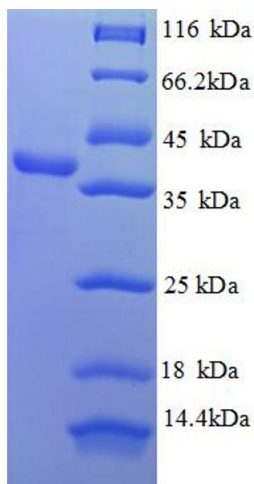
Concentration: 0.1-2 mg/mL

Buffer: 20 mM Tris-HCl based buffer, pH 8.0

Storage: -80 °C, 4 °C, -20 °C

Storage Comment: Store at -20°C, for extended storage, conserve at -20°C or -80°C. Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Images



SDS-PAGE

Image 1.