



Anti-APEX1 (aa 200-300) polyclonal antibody (DPABH-21132)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Antigen Description

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/apyrimidinic (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 removing lesions (such as phosphoglycolate) blocking the 3 side of DNA strand breaks. 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.

Immunogen	Synthetic peptide conjugated to KLH derived from within residues 200 - 300 of Human APE1.
Isotype	IgG
Source/Host	Rabbit
Species Reactivity	Human
Purification	Immunogen affinity purified
Conjugate	Unconjugated
Applications	IHC-P, ICC/IF, WB
Format	Liquid
Size	100 µg
Buffer	pH: 7.40; Constituent: PBS
Preservative	0.02% Sodium Azide
Storage	Store at 4°C short term (1-2 weeks). Aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

GENE INFORMATION

Gene Name	APEX1 APEX nuclease (multifunctional DNA repair enzyme) 2 [Homo sapiens]
Official Symbol	APEX1
Synonyms	APEX1; APEX nuclease (multifunctional DNA repair enzyme) 1; APE; APX; APE1; APEN; APEX; HAP1; REF1; DNA-(apurinic or apyrimidinic site) lyase; AP lyase; protein REF-1; redox factor-1; AP endonuclease class I; apurinic-apyrimidinic endonuclease 1; apurinic/apyrimidinic (abasic) endonuclease; deoxyribonuclease (apurinic or apyrimidinic);
Entrez Gene ID	328
Protein Refseq	NP_001231178.1
UniProt ID	P27695
Pathway	BER complex; Base Excision Repair; Base excision repair; DNA Repair
Function	3-5 exonuclease activity; 3-5 exonuclease activity; DNA binding; DNA-(apurinic or apyrimidinic site) lyase activity