

# Ref-1 Polyclonal Antibody

Catalog # AP72222

## Product Information

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|--------------------------|------------------------|
| <b>Application</b>       | WB, IHC-P, IF, ICC, E  |
| <b>Primary Accession</b> | <a href="#">P27695</a> |
| <b>Reactivity</b>        | Human, Mouse, Rat      |
| <b>Host</b>              | Rabbit                 |
| <b>Clonality</b>         | Polyclonal             |

## Additional Information

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|---------------------------|--|
| <b>Other Names</b>        | APEX1; APE; APE1; APEX; APX; HAP1; REF1; DNA-(apurinic or apyrimidinic site) lyase; APEX nuclease; APEN; Apurinic-apyrimidinic endonuclease 1; AP endonuclease 1; APE-1; REF-1; Redox factor-1 |
| <b>Dilution</b>           | WB--Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications. IHC-P--N/A IF--1:50~200 ICC--N/A E--N/A                           |
| <b>Format</b>             | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.  |
| <b>Storage Conditions</b> | -20°C  |

## Protein Information

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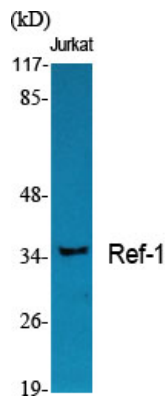
### Background

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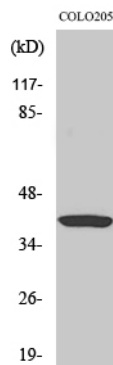
Multifunctional protein that plays a central role in the cellular response to oxidative stress. The two major activities of APEX1 are DNA repair and redox regulation of transcriptional factors. Functions as a apurinic/apyrimidinic (AP) endodeoxyribonuclease in the DNA base excision repair (BER) pathway 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. May also play a role in the epigenetic regulation of gene expression by participating in DNA demethylation. 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.

## Images



Western Blot analysis of various cells using Ref-1 Polyclonal Antibody diluted at 1 : 2000



Western Blot analysis of HeLa cells using Ref-1 Polyclonal Antibody diluted at 1 : 2000

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.