Data Sheet (Cat.No.TMPY-02433)

TargetMol

APE1/APEX1 Protein, Human, Recombinant (His)

General Information

Synonyms:	APEX;HAP1;APX;APE;APEX nuclease (multifunctional DNA repair enzyme) 1;APEN;REF1;APE1
Protein Construction:	A DNA sequence encoding the human APEX1 (P27695) (Pro2-Leu 318) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P27695
Molecular Weight:	37 kDa (predicted); 37 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 92 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The enzyme is known to be a redox factor (Ref-1) stimulating DNA binding activity of AP-1 binding proteins such as Fos and Jun as well as a multifunctional DNA repair enzyme having 5' AP endonuclease, DNA 3' repair diesterase, 3'-5' exonuclease and DNA 3'-phosphatase activities.Although Apex mRNA was expressed ubiquitously, the levels varied significantly, suggesting organ- or tissue-specific expression of the Apex gene. The highest level was observed in the testis, relatively high levels in the thymus, spleen, kidney and brain, and the lowest level in the

liver in rats. However, the present results suggested that APEX/Ref-1 gene product can interact with AP-1 binding proteins in brain, especially in the hippocampal formation, to regulate some brain functions by redox-activation.

Reference

Ono Y,et al. (1995) Developmental expression of APEX nuclease, a multifunctional DNA repair enzyme, in mouse brains. Brain Res Dev Brain Res.86 (1-2): 1-6.

Tan Y,et al. (1996) cDNA cloning of rat major AP endonuclease (APEX nuclease) and analyses of its mRNA expression in rat tissues. Acta Med Okayama. 50 (1): 53-60.

Yao M,et al. (1999) Genomic structure of the rat major AP endonuclease gene (Apex) with an adjacent putative O-sialoglycoprotease gene (Prsmg1/Gcpl1) and a processed Apex pseudogene (Apexp1). Acta Med Okayama. 53 (6): 245-52.

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