

ENDOG Antibody

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP52005

Product Information

Application	WB
Primary Accession	Q14249
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	32620

Additional Information

Gene ID	2021
Other Names	Endonuclease G, mitochondrial, Endo G, 3130-, ENDOG
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human ENDOG. The exact sequence is proprietary.
Dilution	WB~~1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	ENDOG
Function	Endonuclease that preferentially catalyzes the cleavage of double-stranded 5-hydroxymethylcytosine (5hmC)-modified DNA (PubMed: 25355512). The 5hmC-modified nucleotide does not increase the binding affinity, but instead increases the efficiency of cutting and specifies the site of cleavage for the modified DNAs (By similarity). Shows significantly higher affinity for four-stranded Holliday junction over duplex and single-stranded DNAs (By similarity). Promotes conservative recombination when the DNA is 5hmC-modified (PubMed: 25355512). Promotes autophagy through the suppression of mTOR by its phosphorylation-mediated interaction with YWHAG and its endonuclease activity-mediated DNA damage response (PubMed: 33473107). GSK3-beta mediated phosphorylation of ENDOG enhances its interaction with YWHAG, leading to the release of TSC2 and PIK3C3 from YWHAG resulting in mTOR pathway suppression and autophagy initiation (PubMed: 33473107). Promotes cleavage of mtDNA in response to oxidative and nitrosative stress, in turn inducing compensatory mtDNA replication (PubMed: 29719607).

Background

Cleaves DNA at double-stranded (DG)_n.(DC)_n and at single-stranded (DC)_n tracts. In addition to deoxyribonuclease activities, also has ribonuclease (RNase) and RNase H activities. Capable of generating the RNA primers required by DNA polymerase gamma to initiate replication of mitochondrial DNA (By similarity).

References

Zeviani M.,et al.Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases.
Humphray S.J.,et al.Nature 429:369-374(2004).
Tiranti V.,et al.Genomics 25:559-564(1995).
Burkard T.R.,et al.BMC Syst. Biol. 5:17-17(2011).

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