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POLH Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20546a

Product Information

Application	WB, E
Primary Accession	Q9Y253
Other Accession	Q9JJN0
Reactivity	Human, Mouse
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB40403
Calculated MW	78413

Additional Information

Gene ID	5429
Other Names	DNA polymerase eta, RAD30 homolog A, Xeroderma pigmentosum variant type protein, POLH, RAD30, RAD30A, XPV
Target/Specificity	This POLH antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 68-92 amino acids of human POLH.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	POLH Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	POLH
Synonyms	RAD30, RAD30A, XPV
Function	DNA polymerase specifically involved in the DNA repair by translesion synthesis (TLS) (PubMed:10385124, PubMed:11743006, PubMed:16357261,

PubMed:20388628, PubMed:24449906, PubMed:24553286, PubMed:38212351). Due to low processivity on both damaged and normal DNA, cooperates with the heterotetrameric (REV3L, REV7, POLD2 and POLD3) POLZ complex for complete bypass of DNA lesions. Inserts one or 2 nucleotide(s) opposite the lesion, the primer is further extended by the tetrameric POLZ complex. In the case of 1,2-intrastrand d(GpG)- cisplatin cross-link, inserts dCTP opposite the 3' guanine (PubMed:24449906). Particularly important for the repair of UV-induced pyrimidine dimers (PubMed:10385124, PubMed:11743006). Although inserts the correct base, may cause base transitions and transversions depending upon the context. May play a role in hypermutation at immunoglobulin genes (PubMed:11376341, PubMed:14734526). Forms a Schiff base with 5'-deoxyribose phosphate at abasic sites, but does not have any lyase activity, preventing the release of the 5'-deoxyribose phosphate (5'-dRP) residue. This covalent trapping of the enzyme by the 5'-dRP residue inhibits its DNA synthetic activity during base excision repair, thereby avoiding high incidence of mutagenesis (PubMed:14630940). Targets POLI to replication foci (PubMed:12606586).

Cellular Location

Nucleus. Note=Binding to ubiquitinated PCNA mediates colocalization to replication foci during DNA replication and persists at sites of stalled replication forks following UV irradiation (PubMed:12606586, PubMed:16357261, PubMed:24553286). After UV irradiation, recruited to DNA damage sites within 1 hour, to a maximum of about 80%; this recruitment may not be not restricted to cells active in DNA replication (PubMed:22801543). Colocalizes with TRAIP to nuclear foci (PubMed:24553286).

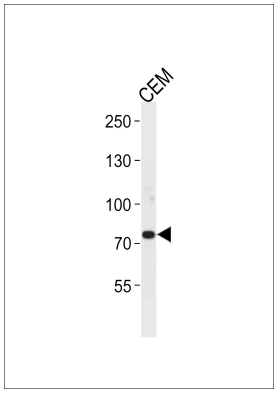
Background

DNA polymerase specifically involved in DNA repair. Plays an important role in translesion synthesis, where the normal high fidelity DNA polymerases cannot proceed and DNA synthesis stalls. Plays an important role in the repair of UV-induced pyrimidine dimers. Depending on the context, it inserts the correct base, but causes frequent base transitions and transversions. May play a role in hypermutation at immunoglobulin genes. Forms a Schiff base with 5'-deoxyribose phosphate at abasic sites, but does not have lyase activity. Targets POLI to replication foci.

References

Masutani C.,et al.Nature 399:700-704(1999). Johnson R.E.,et al.Science 285:263-265(1999). Yuasa M.,et al.Oncogene 19:4721-4728(2000). Mungall A.J.,et al.Nature 425:805-811(2003). Glick E.,et al.EMBO J. 20:7303-7312(2001).

Images



POLH Antibody (N-term) (Cat.# AP20546a) western blot analysis in CEM cell lysate (35ug/lane). This demonstrates that the POLH antibody detected the POLH protein (arrow).

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