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POLH Blocking Peptide (N-term)

Synthetic peptide
Catalog # BP20546a

Specification

POLH Blocking Peptide (N-term) - Product Information

Primary Accession	O9Y253
Other Accession	O9JJN0

POLH Blocking Peptide (N-term) - Additional Information

Gene ID 5429

Other Names
DNA polymerase eta, RAD30 homolog A, Xeroderma pigmentosum variant type protein, POLH, RAD30, RAD30A, XPV

Target/Specificity
The synthetic peptide sequence is selected from aa 78-92 of HUMAN POLH

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

POLH Blocking Peptide (N-term) - Protein Information

Name POLH

Synonyms RAD30, RAD30A, XPV

Function
DNA polymerase specifically involved in the DNA repair by translesion synthesis (TLS)

POLH Blocking Peptide (N-term) - 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.

POLH Blocking Peptide (N-term) - 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).

(PubMed:10385124, PubMed:11743006, PubMed:24449906, PubMed:24553286, PubMed:16357261). 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:<a href="http://www.uniprot.org/citations/12606586"

target="_blank">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).

POLH Blocking Peptide (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides