

**POLD2 Blocking Peptide (Center)**  
**Synthetic peptide**  
**Catalog # BP20474c****Specification**

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**POLD2 Blocking Peptide (Center) - Product Information**

Primary Accession [P49005](#)  
Other Accession [Q6AXY4](#), [O35654](#), [P49004](#)

**POLD2 Blocking Peptide (Center) - Additional Information**

**Gene ID** 5425

**Other Names**

DNA polymerase delta subunit 2, DNA polymerase delta subunit p50, POLD2

**Target/Specificity**

The synthetic peptide sequence is selected from aa 252-265 of Human POLD2

**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.

**POLD2 Blocking Peptide (Center) - Protein Information**

**Name** POLD2

**Function**

Accessory component of both the DNA polymerase delta complex and the DNA polymerase zeta complex (PubMed:<a href="http://www.uniprot.org/citations/22801543" target="\_blank">22801543</a>, PubMed:<a href="http://www.uniprot.org/citations/17317665" target="\_blank">17317665</a>, PubMed:<a href="http://www.uniprot.org/citations/24449906" target="\_blank">24449906</a>). As a component of the trimeric and tetrameric DNA polymerase delta complexes (Pol-delta3 and Pol-delta4, respectively), plays a role in high fidelity genome replication, including in lagging strand synthesis, and repair (PubMed:<a href="http://www.uniprot.org/citations/12403614" target="\_blank">12403614</a>, PubMed:<a href="http://www.uniprot.org/citations/16510448" target="\_blank">16510448</a>, PubMed:<a href="http://www.uniprot.org/citations/19074196" target="\_blank">19074196</a>, PubMed:<a href="http://www.uniprot.org/citations/20334433" target="\_blank">20334433</a>, PubMed:<a href="http://www.uniprot.org/citations/24035200" target="\_blank">24035200</a>). Pol-delta3 and Pol-delta4 are characterized by the absence or the presence of POLD4. They exhibit differences in catalytic activity. Most notably, Pol-delta3 shows higher proofreading activity than

Pol-delta4 (PubMed:<a href="http://www.uniprot.org/citations/19074196" target="\_blank">19074196</a>, PubMed:<a href="http://www.uniprot.org/citations/20334433" target="\_blank">20334433</a>). Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may also be better suited to fulfill this task, exhibiting near-absence of strand displacement activity compared to Pol-delta4 and stalling on encounter with the 5'-blocking oligonucleotides. Pol-delta3 idling process may avoid the formation of a gap, while maintaining a nick that can be readily ligated (PubMed:<a href="http://www.uniprot.org/citations/24035200" target="\_blank">24035200</a>). Along with DNA polymerase kappa, DNA polymerase delta carries out approximately half of nucleotide excision repair (NER) synthesis following UV irradiation (PubMed:<a href="http://www.uniprot.org/citations/20227374" target="\_blank">20227374</a>). Under conditions of DNA replication stress, required for the repair of broken replication forks through break-induced replication (BIR) (PubMed:<a href="http://www.uniprot.org/citations/24310611" target="\_blank">24310611</a>). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine or abasic sites performed by Pol- delta4, independently of DNA polymerase zeta (REV3L) or eta (POLH). Facilitates abasic site bypass by DNA polymerase delta by promoting extension from the nucleotide inserted opposite the lesion. Also involved in TLS as a component of the DNA polymerase zeta complex (PubMed:<a href="http://www.uniprot.org/citations/24449906" target="\_blank">24449906</a>). Along with POLD3, dramatically increases the efficiency and processivity of DNA synthesis of the DNA polymerase zeta complex compared to the minimal zeta complex, consisting of only REV3L and REV7 (PubMed:<a href="http://www.uniprot.org/citations/24449906" target="\_blank">24449906</a>).

#### **Cellular Location**

Nucleus. Note=Recruited to DNA damage sites within 2 hours following UV irradiation.

#### **POLD2 Blocking Peptide (Center) - Protocols**

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

- [Blocking Peptides](#)

#### **POLD2 Blocking Peptide (Center) - Images**

#### **POLD2 Blocking Peptide (Center) - Background**

The function of the small subunit is not yet clear.

#### **POLD2 Blocking Peptide (Center) - References**

Zhang J., et al. Genomics 29:179-186(1995).  
Perez A., et al. Biochim. Biophys. Acta 1493:231-236(2000).  
He H., et al. Proc. Natl. Acad. Sci. U.S.A. 98:11979-11984(2001).  
Liu L., et al. J. Biol. Chem. 278:10041-10047(2003).  
Tsurimoto T., et al. Genes Cells 10:13-22(2005).