

## **POLK Blocking Peptide (Center)**

Synthetic peptide Catalog # BP19981c

### **Specification**

# **POLK Blocking Peptide (Center) - Product Information**

Primary Accession Q9UBT6
Other Accession NP\_057302.1

# **POLK Blocking Peptide (Center) - Additional Information**

**Gene ID** 51426

#### **Other Names**

DNA polymerase kappa, DINB protein, DINP, POLK, DINB1

## Target/Specificity

The synthetic peptide sequence is selected from aa 546-560 of HUMAN POLK

#### **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.

### **POLK Blocking Peptide (Center) - Protein Information**

Name POLK

Synonyms DINB1

### **Function**

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. Depending on the context, it inserts the correct base, but causes frequent base transitions, transversions and frameshifts. Lacks 3'-5' proofreading exonuclease activity. Forms a Schiff base with 5'-deoxyribose phosphate at abasic sites, but does not have lyase activity.

### **Cellular Location**

Nucleus. Note=Detected throughout the nucleus and at replication foci (PubMed:12414988). Recruited to DNA damage sites in response to ultraviolet irradiation: N6-methyladenosine (m6A)-containing mRNAs accumulate in the vicinity of DNA damage sites and their presence is required to recruit POLK (PubMed:28297716)



### **Tissue Location**

Detected at low levels in testis, spleen, prostate and ovary. Detected at very low levels in kidney, colon, brain, heart, liver, lung, placenta, pancreas and peripheral blood leukocytes

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

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

# • Blocking Peptides

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

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

External and internal DNA-damaging agents continually threaten the integrity of genetic material in cells. Although a variety of repair mechanisms exist to remove the resulting lesions, some lesions escape repair and block the replication machinery. Members of the Y family of DNA polymerases, such as POLK, permit the continuity of the replication fork by allowing replication through such DNA lesions. Each Y family polymerase has a unique DNA-damage bypass and fidelity profile. POLK is specialized for the extension step of lesion bypass (summary by Lone et al., 2007 [PubMed 17317631]).

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

Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010):
Monsees, G.M., et al. Breast Cancer Res. Treat. (2010) In press:
Katafuchi, A., et al. Nucleic Acids Res. 38(3):859-867(2010)
Fukuda, H., et al. J. Biol. Chem. 284(38):25585-25592(2009)
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