

# TREVIGEN® Product Data

For Research Use Only. Not For Use In Diagnostic Procedures

## *Sulfolobus solfataricus* DNA polymerase IV (Dpo4)

(10 µg Dpo4, buffer and divalent cations)

Catalog #: 4150-010-EB

Contents:		Size:
4150-010-01	Dpo4	10 µg
3900-500-15	10X REC™ Buffer 15	1 ml
4150-010-02	100 mM MgCl <sub>2</sub>	1 ml
4150-010-03	50 mM MnCl <sub>2</sub>	1 ml

**Description:** Dpo4 is a thermophilic Y-family DNA polymerase capable of performing translesion synthesis and allows for coupling to PCR for amplification of damaged DNA(1). Dpo4 has a molecular weight of 42 kDa and is 95% pure by SDS PAGE. Translesion synthesis is enhanced by the presence of Mn<sup>2+</sup> in the reaction.

**Source:** Purified from *E. coli* containing a recombinant plasmid harboring the *S. solfataricus* Dpo4 gene.

**Unit Definition:** One unit of enzyme incorporates 1 nmole of dTMP onto the 3' end of d(T)<sub>24</sub> using poly(dA)<sub>300</sub> as template in 30 minutes at 60°C.

**Read-through Specificity:** Dpo4 catalyzes translesion synthesis across the following forms of DNA damage: AP sites, *cis-syn* thymine-thymine dimer, 6-4 photoproducts, cisplatinum- and acetyl aminofluorene guanine adducts.

**Assay Conditions & Analysis:** 1X REC Buffer 15 [10 mM HEPES-NaOH (pH 7.8), 1 mM DTT, 50 mM NaCl, 100 µg/ml BSA, 0.1% Triton X-100], 10 mM MgCl<sub>2</sub>, 1 pmole of <sup>32</sup>P-labeled d(T)<sub>24</sub>, 2 pmole of poly(dA)<sub>300</sub>, and serial dilutions of enzyme in a 20 µl reaction volume are incubated for 30 minutes at 60°C. Reaction products are resolved by 20% denaturing polyacrylamide gel electrophoresis. Bands are cut out and radioactivity counted to quantify newly synthesized products.

**Storage Buffer:** 20 mM Tris-HCl (pH 7.8), 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT, and 50% (v/v) glycerol.

**Storage Conditions:** Store at -20°C in a manual defrost freezer. For long-term storage, freeze at -80°C in working aliquots. Avoid repeated freeze-thawing. Enzyme may be diluted in 1X REC Buffer 15 for immediate use.

### Reference:

1. Boudsocq, F, Iwai, S, Hanaoka, F, and Woodgate, R. 2001. *Sulfolobus solfataricus* P2 DNA polymerase IV (Dpo4): an archaeal DinB-like DNA polymerase with lesion-bypass properties akin to eukaryotic polη. *Nucleic Acids Res.* **29**, 4607-4616.

**Lot Specific Data:** See reverse side.

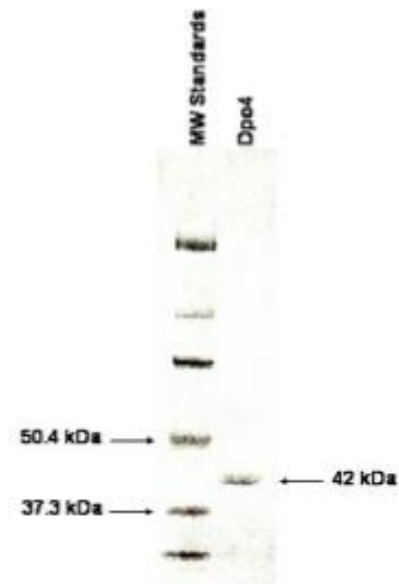


Fig. 1. SDS polyacrylamide gel electrophoresis of Dpo4

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**TREVIGEN®**  
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