

## Product Information

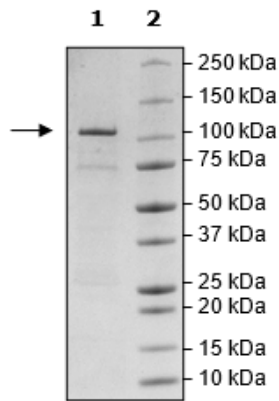
<b>Description:</b>	Recombinant human DNA polymerase $\theta$ (Theta), also known as POLQ, encompassing amino acids 1792 to 2590. This construct contains an N-terminal His-tag (6xHis) followed by a thrombin cleavage site and a SUMO-tag. This protein was affinity purified.
<b>Background:</b>	Polymerases are the enzymes responsible for synthesizing nucleic acids. DNA Polymerase $\theta$ , also known as DNA polymerase subunit theta, POLQ, belongs to the Family A of DNA polymerases. In addition to its DNA polymerase activity, it acts on the theta-mediated end joining (TMEJ), which classifies it as a specialized polymerase. TMEJ is a DNA repair mode that is prone to errors, and in addition to DNA polymerase $\theta$ it involves PARP1 (poly polymerase 1) and DNA ligase III. Inhibition of DNA polymerase $\theta$ in cells containing a homologous recombination (HR) deficiency, as in BRCA (breast cancer type 1/2 susceptibility protein) deficient cells, is synthetic lethal. Therefore, polymerase $\theta$ inhibitors are promising candidates for the treatment of HR-deficient cancers or in combination with HR inhibitors such as PARP inhibitors. Further development of DNA polymerase $\theta$ inhibitors will bring new therapy options to cancer patients.
<b>Species:</b>	Human
<b>Construct:</b>	DNA Polymerase $\theta$ (His-Th-SUMO-1792-2590)
<b>Concentration:</b>	0.35 mg/ml
<b>Expression System:</b>	<i>E. coli</i>
<b>Purity:</b>	80%
<b>Format:</b>	Aqueous buffer solution.
<b>Formulated In:</b>	40 mM Tris-HCl, pH 8.0, 110 mM NaCl, 2.2 mM KCl, and 20% glycerol
<b>MW:</b>	103 kDa
<b>Genbank Accession:</b>	NM_199420.4
<b>Stability:</b>	At least 6 months at -80°C.
<b>Storage:</b>	-80°C
<b>Instructions for Use:</b>	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
<b>Assay Conditions:</b>	Assay was performed according to DNA Polymerase $\theta$ Assay Kit (BPS Bioscience #82107) with various amounts of DNA Polymerase $\theta$ (POLQ) protein.
<b>Applications:</b>	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

# DNA Polymerase $\theta$ (POLQ), His-Tag, SUMO-Tag Recombinant

Catalog: 101945  
Lot: 230726-G

## Quality Control Data

### 4-20% SDS-PAGE Coomassie Staining



### DNA Polymerase $\theta$ Activity

