

## PRIM1 Protein, Human

Cat. No.:	HY-P701968
Synonyms:	PRIM1; DNA primase small subunit; DNA primase 49 kDa subunit; p49
Species:	Human
Source:	E. coli
Accession:	P49642 (M1-F420)
Gene ID:	5557
Molecular Weight:	

### PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

### DESCRIPTION

Background	<p>PRIM1, the catalytic subunit of the DNA primase complex and a vital component of the DNA polymerase alpha complex, plays a crucial role in the initiation of DNA synthesis. During the S phase of the cell cycle, the DNA polymerase alpha complex, comprising POLA1, POLA2, PRIM1, and PRIM2, is recruited to DNA replicative forks through direct interactions with MCM10 and WDHD1. Within this complex, PRIM1 initiates DNA synthesis by oligomerizing short RNA primers on both leading and lagging strands. The primers are subsequently extended by the polymerase alpha catalytic subunit and transferred to polymerase delta and polymerase epsilon for processive synthesis on the lagging and leading strands, respectively. In the primase complex, both subunits are indispensable for the initial di-nucleotide formation, while the extension of the primer depends solely on the catalytic subunit. PRIM1 synthesizes 9-mer RNA primers, known as 'unit length' RNA primers, incorporating ribonucleotides in the presence of ribo- and deoxy-nucleotide triphosphates (rNTPs, dNTPs). The initiation of RNA primer synthesis by PRIM1 requires a template thymine or cytidine, with an adenine or guanine at its 5'-end, and exhibits binding affinity for single-stranded DNA.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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