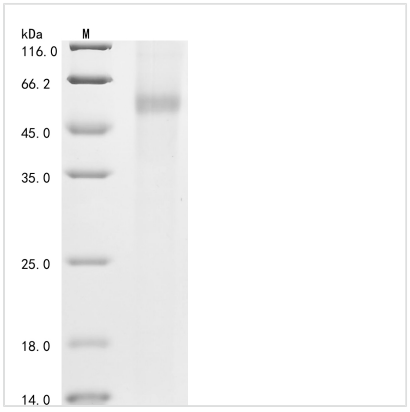
Recombinant Human Poly [ADP-ribose] polymerase 1 (PARP1), partial

Product Code	CSB-EP017457HU1
Abbreviation	Recombinant Human PARP1 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P09874
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	KTQTPNRKEWVTPKEFREISYLKKLKVKKQDRIFPPETSASVAATPPPSTASAP AAVNSSASADKPLSNMKILTLGKLSRNKDEVKAMIEKLGGKLTGTANKASLCIS TKKEVEKMNKKMEEVKEANIRVVSEDFLQDVSASTKSLQELFLAHILSPWGAE VKAEPVEVVAPRGKSGAALSKKSKGQVKEEGINKSEKRMKLTLKGGAAVDPD SGLEH
Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Target Names	PARP1
Expression Region	324-541aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-GST-tagged
Mol. Weight	55.2 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

To produce recombinant human PARP1 in E. coli, the target gene is co-inserted into an expression plasmid with an N-terminal 6xHis-GST-tag gene and transformed into E. coli cells. The target gene codes for the 324-541aa of human PARP1. The cells are cultured to express the protein. The cells are lysed to release the recombinant PARP1 protein, which is purified using the affinity chromatography technique. Protein purity is evaluated by SDS-PAGE, reaching over 85%.

Human PARP1 is a DNA-dependent ADP-ribosylation transferase that has robust auto-PARylation activity, involving the addition of poly(ADP-ribose) chains to target proteins. It modulates protein ADP-ribosylation, affecting the functions of the modified proteins [1]. This enzyme is involved in genome stability, protein homeostasis, cell proliferation, differentiation, and apoptosis [2]. PARP1 regulates gene transcription and competes with histone deacetylases for the substrate NAD+ [3]. Activation of PARP1 is triggered by DNA damage, such as single-strand breaks, which can occur in response to inflammatory diseases, diabetes, reperfusion injury, or oxidative stress [4].

PARP1 is also involved in chromatin remodeling processes, contributing to local chromatin relaxation upon DNA damage [5]. Furthermore, PARP1 expression has been linked to various human cancers. Studies have shown that the upregulation of PARP1 in triple-negative breast cancer and endometrial cancer [6][7]. The research has found that PARP1 regulates the activity of influenza A virus polymerase, highlighting its role in viral replication processes [8].

References:
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Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.