Creative Enzymes®

Poly [ADP-ribose] polymerase 1 from Human, Recombinant

Cat. No. NATE-0507

Lot. No. (See product label)

Introduction

Description	PARP-1, a nuclear enzyme that synthesizes ADP-ribose polymers from NAD, specifically binds Zn2+ and DNA, and recognizes single-strand breaks in DNA. It is involved in base excision repair, both short-patch and long-patch, rejoining DNA strand breaks and plays a role in p53 expression and activation. A high level of basal neuronal DNA damage and PARP activity has been reported in rat brain tissue. PARP-1 was shown to be required for HIV-1 integration into DNA. If PARP-1 is deficient there is no productive HIV-1 infection.
Applications	PARP-1 is a nuclear enzyme that synthesizes ADP-ribose polymers from NAD+, specifically binds Zn2+ and DNA, and recognizes single-strand breaks in DNA. PARP1 has been used in a study to assess racial and tissue-specific cancer risk ass ociated with polymorphism in the PARP1 gene. It has also been used in a study to investigate inhibitors of PARP-1 for potential cancer treatments.
Synonyms	PARP1; poly (ADP-ribose) synthase; ADP-ribosyltransferase (polymerizing); NAD ADP-ribosyltransferase; PARP; PARP-1; NAD+:poly (adenine-diphosphate-D-ribosyl)-acceptor ADP-D-ribosyl-transferase (incorrect); NAD+:poly (adenosine-diphosphate-D-ribosyl)-acceptor ADP-D-ribosyl-transferase; EC 2.4.2.30

Product Information

Species	Human
Source	E. coli
Form	Supplied as a solution in 20 mM Tris-HCl, pH 8.0, 200 mM NaCl, 1 mM DTT, 0.1% Triton™-X 100, 50 % glycerol, and 0.1 mg/ml BSA.
EC Number	EC 2.4.2.30
CAS No.	58319-92-9
Pathway	BER complex, organism-specific biosystem; BER complex, conserved biosystem; Base excision repair, organism-specific biosystem; Base excision repair, conserved biosystem; Caspase cascade in apoptosis, organism-specific biosystem; FAS pathway and Stress induction of HSP regulation, organism-specific biosystem; Notch-mediated HES/HEY network, organism-specific biosystem
Function	DNA binding; NAD binding; NAD+ ADP-ribosyltransferase activity; metal ion binding; protein N-terminus binding; protein binding; transcription factor binding; transferase activity, transferring glycosyl groups; zinc ion binding
Unit Definition	One unit will incorporate 10 femptomole of poly (ADP-ribose) from NAD into 5 µg of immobilized histone proteins in 30 minutes at 22°C in a 96 well plate.

Storage and Shipping Information

Storage	−20°C