PRODUCT DATA SHEET

Product: **PARP-1 (human recombinant)**

Cat. No.: **BC-032 (20 µg)**

Background:
The cDNA encoding human poly(ADP-ribose) polymerase (PARP) was cloned by several groups simultaneously. With the discovery of new members (homologs) of the PARP family, PARP is referred to as PARP-1.

An isolated cDNA from mouse and human encoded a protein with considerable homology to the catalytic domain of PARP-1. This protein, termed PARP-2, is a 64 kDa protein that contains a nuclear localization signal (NLS) and is activated by DNA breaks, although its DNA-binding domain is very different from that of PARP-1.

Evidence has accumulated that PARP plays a role in DNA repair and a substantial effort has been invested to elucidate the physiological function of the PARP pathway in cellular recovery from DNA damage. PARP has been found in the base excision repair (BER) complex with DNA polymerase-β, ligase III and x-ray repair cross-complementing 1 (XRCC1). PARP-1 and PARP-2, even though lacking the zinc-finger domains, bind to single and double strand breaks during oxidative stress. In general, it appears that an early enzymatic activation of PARP occurs upon DNA-strand break formation. Binding of PARP to a DNA nick may then cause a transient halt to cellular activity and protect the DNA from sister chromatid associated proteins such as histones. Nicotinamide is cleaved in this step from the substrate NAD+ by PARP and the so synthesized poly(ADP)-ribose (PAR) is then used to generate ATP.

Source:
Recombinant protein produced in insect cells (Sf9).

Purity:
≥99% as determined by SDS-PAGE.

EC:
2.4.2.30

Format:
20 µg at 1 mg/mL affinity-purified liquid human recombinant PARP-1 in 100 mM Tris-HCl (pH 7.5) containing 14 mM β-mercaptoethanol, 0.5 mM EDTA, 0.5 mM PMSF and 10% glycerol.

Specific Activity:
~1,018 U/mg protein. One unit synthesizes 1 nmole of poly(ADP-ribose) per min. at 25℃, pH 7.5.

Storage:
Store at -80℃. Aliquot to avoid repeated freeze/thaw cycles.

Limitations:
For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:
No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.