

BACKGROUND

Poly (ADP-ribose) polymerase (PARP) catalyzes the post-translational modification of proteins by the addition of multiple ADP-ribose moieties. PARP transfers ADP-ribose from nicotinamide dinucleotide (NAD) to glu/asp residues on the substrate protein, and also polymerizes ADP-ribose to form long/branched chain polymers. PARP-1, one of 5 confirmed PARPs, is the most abundant and highly expressed enzyme.¹ PARP-1 detects and relocates to single strand breaks or nicks in chromosomal DNA. PARP-1 is thought to play an important role in the initiation of the DNA repair pathway, although high levels of activation are also associated with increased apoptosis in response to genotoxic stress. In addition, PARP-1 may also operate downstream of the Raf-MEK-ERK pathway through direct interaction with ERK2 in the nucleus in a mechanism DNA damage.² PARP inhibitors are being developed for use in a number of pathologies including cancer, diabetes, stroke and cardiovascular disease.

During cell death by apoptosis cleavage of PARP1 by caspases produces two fragments. The 25 kDa N-terminal peptide retains the DNA binding domains of PARP1. A C-terminal 85 kDa fragment has reduced catalytic activity and its detection is usually taken as a sensitive assay for apoptosis.³

References:

1. Tong, W.M. et al: Biochem. Biophys. Acta 1552:27-37, 2001
2. Kim, M.Y. et al: Gene Dev. 19:1951-1967, 2005
3. Garnier, P. et al: J. Neurosci. 23:7967-73, 2003

TECHNICAL INFORMATION

Source:

PARP-1 Antibody is a mouse monoclonal antibody raised against recombinant human PARP-1 fragments expressed in *E. coli*.

Specificity and Sensitivity:

This antibody detects endogenous PARP-1 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

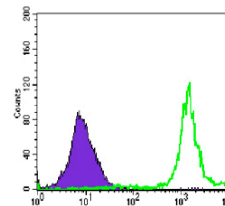
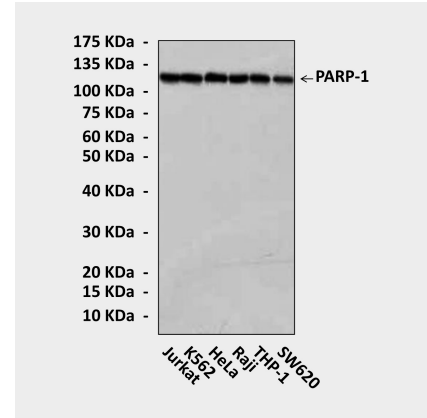
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

| Application: | *Dilution: |
|--------------|------------|
| WB | 1:1000 |
| IP | 1:50 |
| IHC | n/d |
| ICC | n/d |
| FACS | 1:50-200 |

*Optimal dilutions must be determined by end user.

QUALITY CONTROL DATA



Top: Western Blot detection of PARP-1 proteins in various cell lysates using PARP-1 antibody. **Bottom:** This antibody also specifically reacts with PARP-1 proteins in Jurkat cells by FACS testing (PARP-1 antibody: Green; control; Purple).

