



Qty: 100 µg/200 µL
Mouse anti-PARP
Catalog No. 436400

Mouse anti-PARP

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 123 Isotype: IgG1

IMMUNOGEN

Recombinant protein derived from the C-terminal region of human PARP protein.

SPECIFICITY

This antibody is specific for human PARP (PARP-1, NAD(+) ADP-ribosyltransferase 1, poly[ADP-ribose] synthetase 1) protein (accession # NP_001609, P09874), which is 96% homologous with Rhesus monkey and canine, 95% with rat and mouse and 94% with horse. On Western blots of human HeLa and Jurkat cell lysates, it identifies the target band at ~116 kDa.

REACTIVITY

Reactivity has been confirmed with human HeLa and Jurkat cell lysates using Western blotting. The reactivity has been also confirmed with human Jurkat cells using immunoprecipitation and immunofluorescence. Based on amino acid sequence homology, reactivity with Rhesus monkey, canine, rat and mouse as well as horse is also expected.

Sample	Western Blotting	Immunofluorescence	Immunoprecipitation
Human	+++	+++	+++
Canine	ND	ND	ND
Horse	ND	ND	ND
Monkey (Rhesus)	ND	ND	ND
Mouse	ND	ND	ND
Rat	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL
Immunofluorescence: 2 µg/mL
Immunoprecipitation: 5 µg/IP reaction

(cont')

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PI436400

(Rev 10/08) DCC-08-1089

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STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

Poly(ADP-ribose) polymerase (PARP) is a 116 kDa nuclear protein which facilitates DNA repair by binding to DNA breaks and attracting DNA repair proteins to the site of damage.¹ PARP plays a role in DNA repair as well as in other cellular processes, including DNA replication, cell proliferation and differentiation. During apoptosis, ICE family members, such as caspase-3 and -7, cleave PARP. Cleavage of PARP prevents DNA repair, activates a calcium/magnesium-dependent endonuclease, and results in internucleosomal DNA fragmentation. PARP cleavage is considered to be one of the classical characteristics of apoptosis.^{2,3}

Apoptosis is one of the most important pathways through which chemotherapeutic agents inhibit the growth of cancer cells. Studies have shown that higher potency PARP inhibitors have a greatly decreased effect on mono (ADP-ribosyl) transferase enzymes.⁴ These inhibitors have been reported to increase the sensitivity to radiation in a number of human tumor cell lines, both *in vitro* and when grown as xenografts in mice.⁵ Therefore PARP inhibition may represent a novel way of selectively targeting p53-deficient breast cancer cells. The underlying mechanism is probably a potentiation of unrepaired DNA damage, shifting from DNA repair to apoptosis due to the effective inhibition of PARP activity.⁶

REFERENCES

1. Chiarugi A et al. *Science* 297(5579):200-201, 2002.
2. Soldani et al. *Apoptosis* 7(4):321-328, 2002.
3. Lis JT et al. *Cell* 125(7):1225-1227, 2006.
4. Byant EH et al. *Nature* 434 (3443) 913-917, 2005.
5. Aguilar QR et al. *Curr Med Chem* 14(11):1179-87, 2007.
6. Munoz-Gamez JA et al. *Biochem J* 386(Pt 1):119-25, 2005

RELATED PRODUCTS

Product	Conjugate	Cat. No.
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	Goat anti-rabbit IgG (H+L)	Goat anti-mouse IgG (H+L)	Ex/Em*	Fluorescence similar to--
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red®
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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