# Poly(ADP-ribose) monoclonal antibody (10H)

The monoclonal antibody 10H is directed against poly(ADP-ribose) (PAR). PAR is synthesized after activation of the nuclear DNA repair enzyme poly(ADP-ribose)polymerase (PARP). PARP is selectively activated by DNA strand breaks to catalyze the addition of long branched chains of PAR to a variety of nuclear proteins, most notably PARP itself.The amount of PAR formed in living cells with DNA damage is commensurate with the extent of the damage. Under DNA damage conditions, PAR undergoes a rapid turnover, with a half-life in the range of minutes, as PAR is rapidly hydrolyzed and converted to free ADP-ribose by the enzyme poly(ADP-ribose)glycohydrolase (PARG). After massive DNA damage (e.g. γ-irradiation or oxidative stress) PAR is detectable in the first 10 minutes and disappears later on. In keratinocytes MAb 10H has been shown to detect UVB-induced apoptosis as early as 4 hour after irradiation, thus being superior to DNA laddering and the TUNEL assay.Due to the very large number of endonuclease-mediated DNA breaks in apoptosis, PARP becomes strongly activated during the so-called execution phase. In the case of DNA damage-induced apoptosis, this represents a "second round" of PAR synthesis. PAR synthesized during apoptosis appears to be remarkably stable. PAR immunofluorescence appears at least as early during apoptosis as does the specific cleavage of PARP by caspase-3. As shown by several groups, this PAR immunofluorescence correlates well with other markers of apoptosis. MAb to Poly(ADP-ribose) (10H) can be used in flow cytometry.A quantitative non-isotopic immuno-dot-blot method for the assessment of cellular poly(ADP-ribosyl)ation capacity using MAb to Poly(ADP-ribose) (10H) has been described.

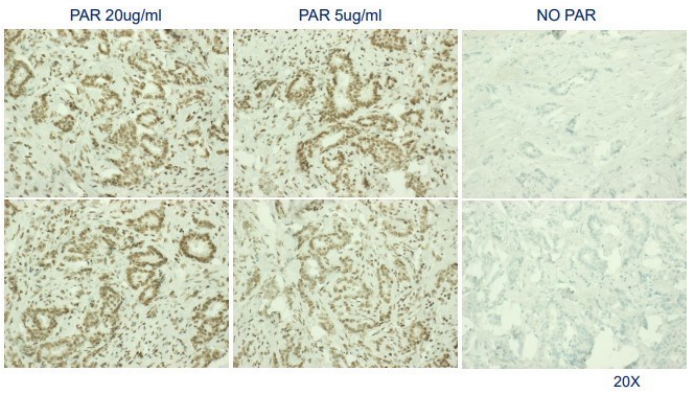
**This antibody is covered by our Worry-Free Guarantee.**

**Citations:** 164 View Online »

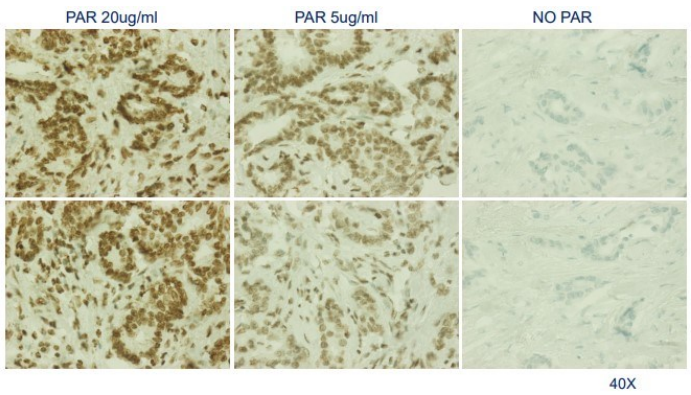
## Ordering Information Order Online »

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|---|---|
| **ALX-804-220-R100** | 100µl |

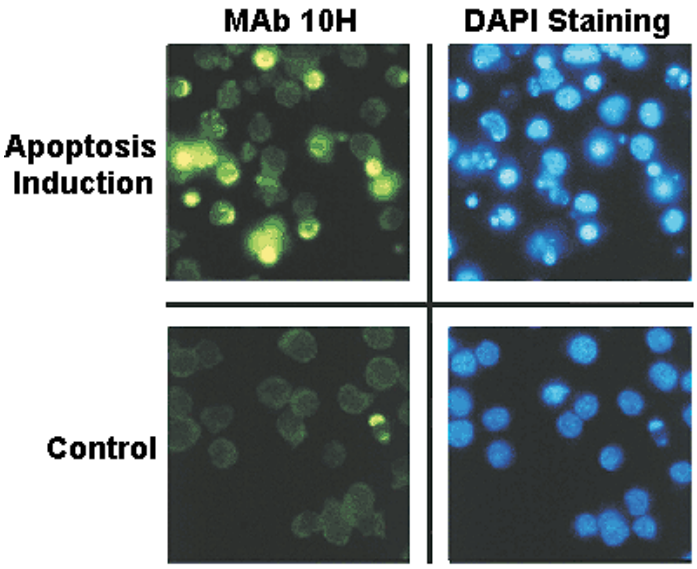
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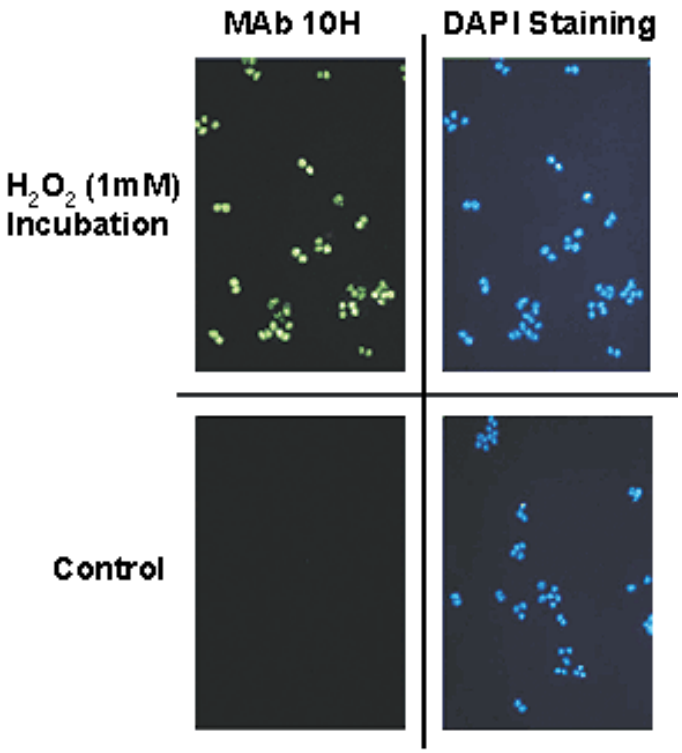

Formalin-fixed paraffin-embedded breast cancer tissue stained using Enzo's PAR antibody (ALX-804-220)



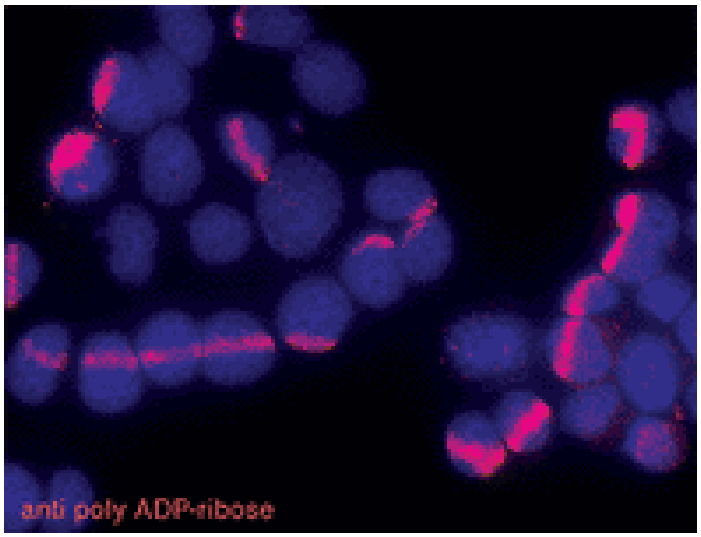

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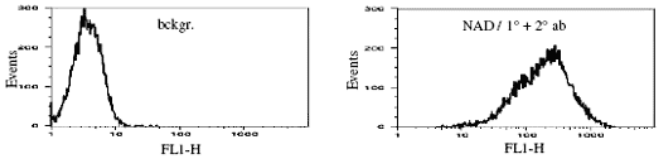

Detection of apoptotic cells by immunocytochemistry.



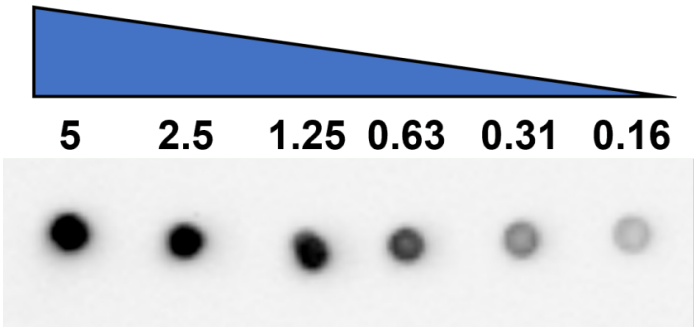

Detection of DNA damage.



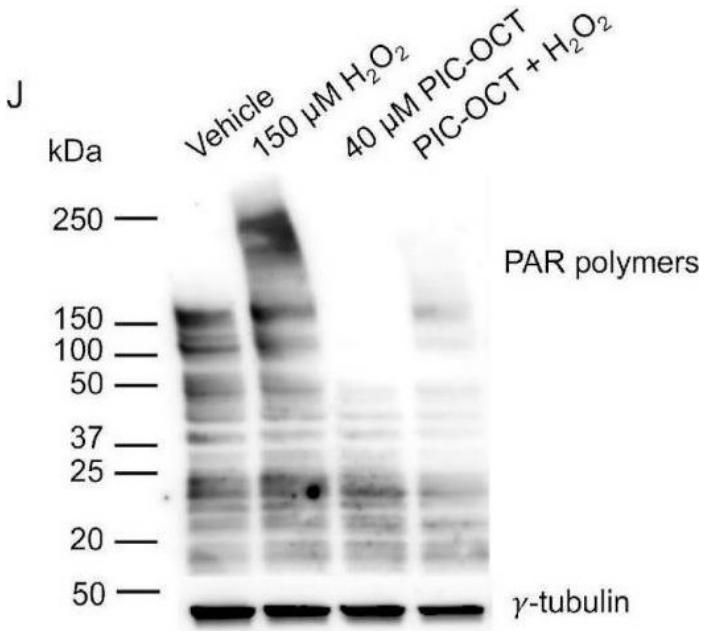

HeLa irradiated cells with a microbeam laser. *Picture courtesy of C.Spenlehauer & G. de Murcia (CNRS, Strasbourg)*




Stimulation of PARP activity in permeabilized human PBMC by addition of NAD and activator oligonucleotide, and inhibitory effect of 3-aminobenzamide.




**Dot blot analysis of representative lot data.**
Poly(ADP-ribose) monoclonal antibody (10H; ALX-804-220-R100) was validated by dot blot analysis using poly(ADP-ribose), standard (ALX-202-043-C001). A serial dilution of poly(ADP-ribose) ranging from 5 ng to 0.16 ng final working concentration was placed onto a nitrocellulose membrane and detected using an HRP-conjugated goat anti-mouse IgG (BML-SA204-0100) and an HRP detection system.




Expressions of PARP1 and PAR-polymers in H2O2- and PIC-OCT-treated 661W cells. The 661W cells were pretreated with 0.02% of DMSO (A–A″, B–B″, C–C″, and D–D″) or 40 μM of PIC-OCT (E–E″, F–F″, G–G″, and H–H″) for 24 h and then cells were exposed to 500 μM of H2O2 from 0 h (T0 h) up to 6 h (T6 h) (A–D and E–H). Then, the cells were fixed at T0 h, T2 h, T4 h, and T6 h and immunostained with anti-PARP1 antibodies (A–H; green). Hoechst dye was used to visualize the cell nuclei (blue). H2O2 exposure increases the expression of nuclear PARP1 (B–D), which was inhibited via PIC-OCT pretreatment (F–H). Scale bars represent 25 μM. The expression of PAR-polymers was evaluated via Western blot (J). The 661W cells pretreated with 40 μM of PIC-OCT for 6 h were cultured and then exposed to 150 μM of H2O2 for 18 h to mimic a chronic oxidative stress model. PIC-OCT decreases the expression of high molecular weight PAR-polymers in cells exposed to H2O2. Gamma-tubulin expression was used as a loading control (J). Graph (I) represents the mean ± SEM of the integrated density of PARP1 nuclear fluorescence (n = 5 photos; more than 300 nuclei were counted in each image). Statistics graph (I): One-way ANOVA followed Šídák's test for the comparison of group pairs. * $p < 0.05$, ** $p < 0.01$.

Image collected and cropped by CiteAb under a CC-BY license from the following publication: Piceid Octanoate Protects Retinal Cells against Oxidative Damage by Regulating the Sirtuin 1/Poly-ADP-Ribose Polymerase 1 Axis In Vitro and in rd10 Mice. *Antioxidants (Basel)* (2024)

## Handling & Storage

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|---|---|
| **Handling** | Avoid freeze/thaw cycles. |
| **Long Term Storage** | -20°C |
| **Shipping** | Blue Ice |

## Regulatory Status

RUO - Research Use Only

## Product Details

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|---|---|
| **Alternative Name** | PAR |
| **Application** | Flow Cytometry, ICC, IHC (PS), WB |
| **Clone** | 10H |
| **Formulation** | Liquid. In 50mM HEPES, pH 7.4, containing 100mM sodium chloride, 1% BSA and 0.02% sodium azide. |
| **Host** | Mouse |
| **Immunogen** | Purified poly(ADP-ribose). |
| **Isotype** | IgG3 |
| **Purity Detail** | Protein A-affinity purified from supernatant. |
| **Recommendation Dilutions/Conditions** | Immunocytochemistry (5-20µg/ml)Immunohistochemistry (paraffin sections; dilution buffer: 5% milk (non fat dried milk) in PBS to a final concentration of 5-20µg/ml)Western Blot (incubate 2.5µg/ml in PBS, 0.05% Tween20, 5% milk (non fat dried milk))Suggested dilutions/conditions may not be available for all applications.Optimal conditions must be determined individually for each application. |
| **Species Reactivity** | Drosophila, Human, Mouse, Rat |
| **Specificity** | Recognizes poly(ADP-ribose) synthesized by a broad range of PARPs (poly(ADP-ribose) polymerases) like human, mouse, rat or *Drosophila* PARP enzyme. |

## Technical Info / Product Notes

## Cited samples:

*For an overview on cited samples please click here.*

## Worry-free Guarantee

**This antibody is covered by our Worry-Free Guarantee .**

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