

Datasheet: MCA1522G

### **BATCH NUMBER 1806**

Description:	MOUSE ANTI POLY(ADP-RIBOSE) POLYMERASE-1		
Specificity:	POLY(ADP-RIBOSE) POLYMERASE-1		
Format:	Purified		
<b>Product Type:</b>	Monoclonal Antibody		
Clone:	A6.4.12		
Isotype:	IgG1		
Quantity:	0.1 mg		

# **Product Details**

### **Applications**

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit <a href="www.bio-rad-antibodies.com/protocols">www.bio-rad-antibodies.com/protocols</a>.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry			•	
Immunohistology - Frozen	-			
Immunohistology - Paraffin (1)	•			
ELISA	•			
Immunoprecipitation	-			
Western Blotting				1/1000 - 1/5000
Immunofluorescence	-			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

(1) Clone A6.4.12 requires antigen retrieval using heat treatment prior to staining of paraffin sections. Sodium citrate buffer pH 6.0 is recommended for this purpose.

Target Species	Human
Species Cross Reactivity	Reacts with: Hamster, Mouse, Drosophila, Xenopus, Rat  N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated fo further information.

Product Form	Purified IgG - liquid		
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant.		
Buffer Solution	Phosphate buffered saline		
Preservative Stabilisers	0.09% Sodium Azide		
Carrier Free	Yes		
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml		
Immunogen	Human PARP-1		
External Database Links	UniProt: P09874 Related reagents  Entrez Gene:		
	142 PARP1 Related reagents		
Synonyms	ADPRT, PPOL		
RRID	AB_2236751		
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of mouse NS0 myeloma cell line.		
Specificity	Mouse anti poly (ADP-ribose) polymerase 1 antibody, clone A6.4.12 recognizes poly (ADP-ribose) polymerase 1 (PARP-1), a ~116 kDa nuclear enzyme, cleaved during apoptosis (Soldani et al. 2002).		
	PARP-1, a caretaker enzyme, is involved in DNA damage repair ( <u>Langelier et al. 2013</u> ), plays roles in diabetes pathophysiology ( <u>Andreone et al. 2012</u> ) and tumour proliferation ( <u>Rosado et al 2013</u> .).		
	As well as protecting cells from genomic instability, PARP-1 is involved in the development of both inflammatory and immune responses, and cell death by apoptosis and necrosis (Erdélyi et al. 2005).		
	Mouse anti poly(ADP-ribose) polymerase 1 antibody, clone A6.4.12, targets PARP-1, an enzyme which represents a promising target for new developments in therapeutic treatment of immune mediated diseases ( <u>Rosado et al. 2013</u> ). PARP-1 has considerable potential for delivering selective tumour cell killing while sparing normal cells ( <u>Pinton et al. 2013</u> ).		

#### References

- 1. Harris, J.L. *et al.* (2009) Aprataxin, poly-ADP ribose polymerase 1 (PARP-1) and apurinic endonuclease 1 (APE1) function together to protect the genome against oxidative damage. <u>Hum Mol Genet. 18: 4102-17.</u>
- 2. Freire, R. *et al.* (2001) Cleavage of the Bloom's syndrome gene product during apoptosis by caspase-3 results in an impaired interaction with topoisomerase Illalpha. <u>Nucleic Acids Res. 29 (15): 3172-80.</u>
- 3. Krohn, A.J. *et al.* (1998) Staurosporine-induced apoptosis of cultured rat hippocampal neurons involves caspase-1-like proteases as upstream initiators and increased production of superoxide as a main downstream effector. <u>J Neurosci. 18 (20): 8186-97.</u>
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- 5. Alexander, B.M. *et al.* (2010) DNA repair protein biomarkers associated with time to recurrence in triple-negative breast cancer. Clin Cancer Res. 16: 5796-804.
- 6. Gueven, N. *et al.* (2004) Aprataxin, a novel protein that protects against genotoxic stress. Hum Mol Genet. 13 (10): 1081-93.
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- 8. Kim, J.W. *et al.* (2000) Inhibition of homodimerization of poly(ADP-ribose) polymerase by its C-terminal cleavage products produced during apoptosis. <u>J Biol Chem. 275: 8121-5.</u>
- 9. Hanzlikova, H. *et al.* (2017) Overlapping roles for PARP1 and PARP2 in the recruitment of endogenous XRCC1 and PNKP into oxidized chromatin. <u>Nucleic Acids Res. 45 (5):</u> 2546-2557.
- 10. Olaussen, K.A. *et al.* (2013) PARP1 impact on DNA repair of platinum adducts: Preclinical and clinical read-outs. <u>Lung Cancer. 80: 216-22.</u>
- 11. Fabrice, A. et al. (2012) PARP and adjuvant cisplatin-based chemotherapy in non-small-cell lung cancer. US patent: 20120277110
- 12. Geistrikh, I. *et al.* (2011) Ca2+-induced PARP-1 activation and ANF expression are coupled events in cardiomyocytes. <u>Biochem J. 438: 337-47.</u>
- 13. Mirzaa, G.M. *et al.* (2014) Mutations in CENPE define a novel kinetochore-centromeric mechanism for microcephalic primordial dwarfism. <u>Hum Genet. 133: 1023-39.</u>
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- 15. Inbar, D. *et al.* (2012) Erythropoietin-driven signalling and cell migration mediated by polyADP-ribosylation. <u>Br J Cancer. 107: 1317-26.</u>
- 16. Buchsbaum, S. *et al.* (2012) FAT10 is a proteasomal degradation signal that is itself regulated by ubiquitination. <u>Mol Biol Cell. 23: 225-32.</u>
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- 19. Okuda, A. *et al.* (2017) Poly(ADP-ribose) polymerase inhibitors activate the p53 signaling pathway in neural stem/progenitor cells. <u>BMC Neurosci. 18 (1): 14.</u>
- 20. Kubelac, P. et al. (2020) Changes in DNA Damage Response Markers with Treatment

in Advanced Ovarian Cancer. Cancers (Basel). 12(3): 707.

21. Komulainen, E. et al. (2021) Parp1 hyperactivity couples DNA breaks to aberrant neuronal calcium signalling and lethal seizures. EMBO Rep. 22 (5): e51851.

### **Further Reading**

- 1. Pinton, G. et al. (2013) PARP1 inhibition affects pleural mesothelioma cell viability and uncouples AKT/mTOR axis via SIRT1. J Cell Mol Med. 17: 233-41.
- 2. Rosado, M. et al. (2013) Beyond dna repair, the immunological role of parp-1 and its siblings. Immunology. 139: 428-37.
- 3. Andreone, T. et al. (2012) Cytokine-mediatedβ-cell damage in PARP-1-deficient islets. Am J Physiol Endocrinol Metab. 303: E172-9.
- 4. Langelier, M.F. and Pascal, J.M. (2013) PARP-1 mechanism for coupling DNA damage detection to poly(ADP-ribose) synthesis. Curr Opin Struct Biol. 23: 134-43.

#### Storage

Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA1522G">https://www.bio-rad-antibodies.com/SDS/MCA1522G</a> 10040
Regulatory	For research purposes only

### Related Products

### **Recommended Secondary Antibodies**

Rabbit Anti Mouse IgG (STAR12...) **RPE** 

Goat Anti Mouse IgG IgA IgM (STAR87...) HRP

Goat Anti Mouse IgG (STAR76...) **RPE** 

Goat Anti Mouse IgG (STAR70...) FITC

Rabbit Anti Mouse IgG (STAR13...) **HRP** 

Goat Anti Mouse IgG (Fc) (STAR120...) FITC, HRP

Rabbit Anti Mouse IgG (STAR9...) **FITC** 

Goat Anti Mouse IgG (STAR77...) **HRP** 

Goat Anti Mouse IgG (H/L) (STAR117...) Alk. Phos., DyLight®488, DyLight®550,

DyLight®650, DyLight®680, DyLight®800,

FITC, HRP

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