Datasheet: MCA1522G

BATCH NUMBER 171096

Description:	MOUSE ANTI POLY(ADP-RIBOSE) POLYMERASE-1
Specificity:	POLY(ADP-RIBOSE) POLYMERASE-1
Format:	Purified
Product Type:	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 www.bio-rad-antibodies.com/protocols.

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

Where this product 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 product 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 for 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 (NaN_3)
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 (Langelier *et al.* 2013), plays roles in diabetes pathophysiology (Andreone *et al.* 2012) and tumour proliferation (Rosado *et al* 2013.). in addition to 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 (Rosado *et al.* 2013). PARP-1 has considerable potential for delivering selective tumour cell killing while sparing normal cells (Pinton *et al.* 2013). Detection of a truncated form of PARP-1, lacking residues encoded by exon 2 has been reported in some PARP-1 knockout strains (Kapova and Tulin 2024).
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. Hum Mol Genet. 18: 4102-17.
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 IIIalpha. Nucleic Acids Res. 29 (15): 3172-80.
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. J Neurosci. 18 (20): 8186-97.
4. Staples, C.J. *et al.* (2010) Cross-talk between the p38alpha and JNK MAPK pathways mediated by MAP kinase phosphatase-1 determines cellular sensitivity to UV radiation. J Biol Chem. 285 (34): 25928-40.
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.
7. Gueven, N. *et al.* (2006) Defective p53 response and apoptosis associated with an ataxia-telangiectasia-like phenotype. Cancer Res. 66: 2907-12.
8. Kim, J.W. *et al.* (2000) Inhibition of homodimerization of poly(ADP-ribose) polymerase by its C-terminal cleavage products produced during apoptosis. J Biol Chem. 275: 8121-5.
9. Hanzlikova, H. *et al.* (2017) Overlapping roles for PARP1 and PARP2 in the recruitment of endogenous XRCC1 and PNKP into oxidized chromatin. Nucleic Acids Res. 45 (5): 2546-2557.
10. Olaussen, K.A. *et al.* (2013) PARP1 impact on DNA repair of platinum adducts: Preclinical and clinical read-outs. Lung Cancer. 80: 216-22.
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. Biochem J. 438: 337-47.
13. Mirzaa, G.M. *et al.* (2014) Mutations in CENPE define a novel kinetochore-centromeric mechanism for microcephalic primordial dwarfism. Hum Genet. 133: 1023-39.
14. Milner, R. *et al.* (2013) Validation of the BRCA1 antibody MS110 and the utility of BRCA1 as a patient selection biomarker in immunohistochemical analysis of breast and ovarian tumours. Virchows Arch. 462: 269-79.
15. Inbar, D. *et al.* (2012) Erythropoietin-driven signalling and cell migration mediated by polyADP-ribosylation. Br J Cancer. 107: 1317-26.
16. Buchsbaum, S. *et al.* (2012) FAT10 is a proteasomal degradation signal that is itself regulated by ubiquitination. Mol Biol Cell. 23: 225-32.
17. Mullane, S.A. *et al.* (2016) Expression Levels of DNA Damage Repair Proteins Are Associated With Overall Survival in Platinum-Treated Advanced Urothelial Carcinoma. Clin Genitourin Cancer. 14 (4): 352-9.
18. Zeng, J. *et al.* (2016) Nucleolar PARP-1 Expression Is Decreased in Alzheimer's Disease: Consequences for Epigenetic Regulation of rDNA and Cognition. Neural Plast. 2016: 8987928.
19. Okuda, A. *et al.* (2017) Poly(ADP-ribose) polymerase inhibitors activate the p53 signaling pathway in neural stem/progenitor cells. BMC Neurosci. 18 (1): 14.
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.
22. Rosso, I. *et al.* (2023) Alternative lengthening of telomeres (ALT) cells viability is dependent on C-rich telomeric RNAs. Nat Commun. 14 (1): 7086.
23. Karpova, Y. & Tulin, A.V. (2024) Adaptive genetic mechanisms in mammalian Parp1 locus. G3 (Bethesda). :jkae165. Jul 26 [Epub ahead of print].

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

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

Guarantee

12 months from date of despatch

Health And Safety Information

Material Safety Datasheet documentation #10040 available at:
https://www.bio-rad-antibodies.com/SDS/MCA1522G

Regulatory

For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG IgA IgM (STAR87...)	HRP
Goat Anti Mouse IgG (STAR70...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Rabbit Anti Mouse IgG (STAR12...)	RPE
Rabbit Anti Mouse IgG (STAR13...)	HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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