Datasheet: TZA0119

Description:	ANTI H3-S10-ADP-RIBOSE
Specificity:	H3-S10-ADP-RIBOSE
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	AbD55558
Isotype:	Fab antibody
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
ELISA	▪			
Western Blotting	▪			

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.

Target Species

Human

Product Form

A monovalent human recombinant Fab selected from the HuCAL® phage display library, Expressed in a proprietary *E. coli.* strain. The antibody is tagged with a DYKDDDDK tag, a SpyTag version 2 (VPTIVMVDAYKRYK) and a His6-tag (HHHHHH) at the C-terminus of the antibody heavy chain. This antibody is supplied as a liquid.

Preparation

Recombinant Fab antibody expressed in *E. coli* and purified by affinity chromatography

Source

E. coli.

Buffer Solution

Phosphate buffered saline

Preservative Stabilisers

0.0095% MIT

Carrier Free

Yes

Approx. Protein Concentrations	Total protein concentration 0.5 mg/ml
Immunogen	ARTKQTARKS(adpr)TGGKAPRKQLAGGK-biotin
Specificity	**Anti-H3-S10-ADP-ribose antibody, clone AbD55558,** recognizes Histone H3, ADP-ribosylated at Serine 10. This antibody also recognizes H3-S28-ADP-ribose due to similarities between sequences flanking the two H3 target sites. Poly(ADP-ribose) polymerase 1 (PARP1) is an early responder to DNA damage in human cells. Upon binding to genomic lesions, PARP1 is able to transfer a mono- or poly-ADP-ribose residue from nicotinamide adenine dinucleotide (NAD+) to substrate proteins, for chromatin decompaction and repair factor recruitment (Bütepage *et al.* 2015, Suskiewicz *et al.* 2020). During the DNA damage response, serine is the primary target for PARP1 ADP-ribosylation which uses Histone PARylation factor 1 (HPF1) as an accessory factor to switch the amino-acid specificity of PARP1 from aspartate/glutamate to serine residues (Bonfiglio *et al.* 2017, Suskiewicz *et al.* 2020). During the DNA damage response PARP1 and HPF1 primarily target PARP1 itself and histone H3, ribosylating these targets. This H3-S10-ADP-ribose antibody, clone AbD55558, is a high affinity H3-S10-ADP-ribose antibody that has been affinity matured from the AbD33644 parental clone (TZA023). Cell lysis in sulfuric acid is recommended to remove general cross-reactivity and enable highly sensitive detection of H3-S10-ADP-ribose by western blotting. Clone AbD55558 is tagged with a SpyTag at the C-terminus of the Fab heavy chain, enabling the user to couple to a SpyCatcher reagent for conversion to alternative formats in less than an hour.
References	1. Dauben, H. *et al.* (2026) Versatile and sensitive detection of mono- and poly(ADP-ribosyl)ation reveals XRCC1-dependent remodelling of PARP1 signalling. Nat Commun. 17 (1): 3216.
Further Reading	1. Dauben, H. *et al.* (2023) A chemical biology/modular antibody platform for ADP-ribosylation signaling. Trends Biochem Sci. 48 (10): 910-911. 2. Bonfiglio, J.J & Matic, I. (2020) Site-Specific Serine Adp-Ribosylated Proteins And Peptides And Method For Producing The Same World Intellectual Property Organization International Publication no. WO2020058277A1
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. Should this product contain a precipitate we recommend microcentrifugation before use.
Guarantee	12 months from date of despatch

Acknowledgements	Bio-Rad has obtained the right for the manufacture and commercialization of the antibodies from Max-Planck-Innovation GmbH, the technology transfer office of the Max Planck Institute for Biology of Ageing. Further information on the Serine ADP-ribosylation technology used to generate and characterize the antibodies can be found here: Dauber *et al.* 2023 and Bonfiglio *et al.* 2020. This product and/or its use is covered by claims of U.S. patents, and/or pending U.S. and non-U.S. patent applications owned by or under license to Bio-Rad Laboratories, Inc. See bio-rad.com/en-us/trademarks for details. His-tag is a registered trademark of EMD Biosciences
Health And Safety Information	Material Safety Datasheet documentation #20479 available at: https://www.bio-rad-antibodies.com/SDS/TZA0119
Regulatory	For research purposes only

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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