

PRODUCT INFORMATION



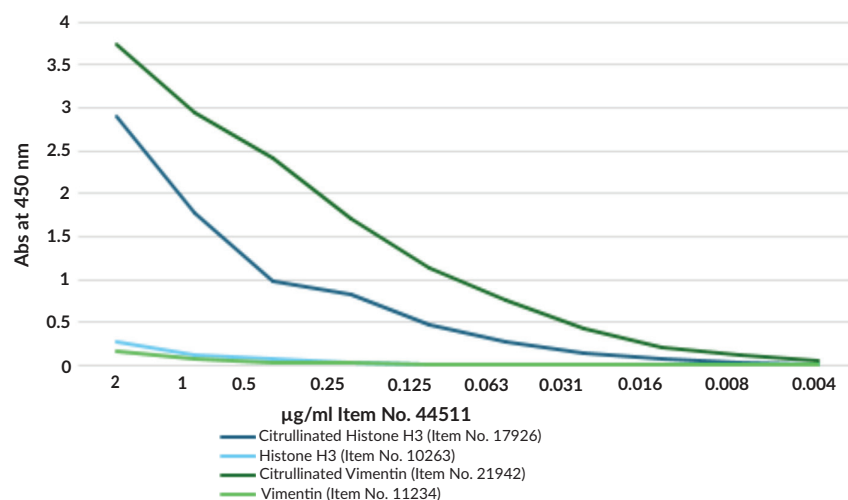
Anti-Citrulline Monoclonal Antibody (Clone 1D9) - HRP

Item No. 44511

Overview and Properties

Contents:	This vial contains 100 µg of HRP-conjugated protein G-purified monoclonal antibody.
Synonyms:	Citrullinated Protein, Pan-citrulline, Peptidyl-citrulline
Immunogen:	Citrulline-containing peptide conjugated to KLH
Cross Reactivity:	(+) Citrullinated proteins, some carbamylated proteins; (-) Native proteins
Species Reactivity:	Species independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥2 years
Storage Buffer:	PBS with 50% glycerol, 0.05% ProClin300™, and other stabilizers
Clone:	1D9
Host:	Mouse
Isotype:	IgG2b
Applications:	ELISA and Western blot (WB); the recommended starting dilution is 1:500-1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



ELISA of Anti-Citrulline Monoclonal Antibody (Clone 1D9) - HRP. Strips were coated with proteins and blocked with 1% BSA followed by probing with Anti-Citrulline Monoclonal Antibody (Clone 1D9) - HRP at indicated concentrations.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/24/2025

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Citrulline is a noncoding amino acid that is produced by deimination of arginine through the post-translational modification citrullination.¹ Citrullination is catalyzed by protein arginine deiminases (PADs) that convert positively charged arginine to electrically neutral citrulline, decreasing the isoelectric point of the protein, altering the native protein structure, and influencing protein ionic interactions.² Protein citrullination has roles in many physiological and pathological processes, including autoimmunity, cancer, and neurodegenerative disorders.³ Citrullination of arginine 26 on histone H3 by PAD2 (Item No. 10785) displaces histone H3 from chromatin, resulting in chromatin decondensation and estrogen receptor α (ER α) transcriptional activation in a reporter assay.⁴ Citrullinated histones are also a component of neutrophil extracellular traps (NETs), a network of decondensed DNA and intracellular proteins secreted by neutrophils as a pathogen defense mechanism that is also a source of citrullinated autoantigens.⁵ Increased levels of antibodies to citrullinated protein antigens (ACPAs) are associated with increased disease severity in patients with rheumatoid arthritis.^{6,7} Plasma levels of citrullinated histone H3 are increased in patients with advanced cancer, and citrullinated glial fibrillary acidic protein (citGFAP; Item No. 28622) has been found in postmortem hippocampus from patients with Alzheimer's disease.^{8,9} Cayman's Anti-Citrulline Monoclonal Antibody (Clone 1D9) - HRP can be used for ELISA and Western blot (WB) applications.

References

1. Yuzhalin, A.E. Citrullination in cancer. *Cancer Res.* **79(7)**, 1274-1284 (2019).
2. György, B., Tóth, E., Falus, A., *et al.* Citrullination: A posttranslational modification in health and disease. *Int. J. Biochem. Cell Biol.* **38(10)**, 1662-1677 (2006).
3. Lee, C.-Y., Wang, D., Wilhelm, M., *et al.* Mining the human tissue proteome for protein citrullination. *Mol. Cell Proteomics* **17(7)**, 1378-1391 (2018).
4. Zhang, X., Bolt, M., Guertin, M.J., *et al.* Peptidylarginine deiminase 2-catalyzed histone H3 arginine 26 citrullination facilitates estrogen receptor α target gene activation. *Proc. Natl. Acad. Sci. USA* **109(33)**, 13331-13336 (2012).
5. Gregori-Puigjané, E., Setola, V., Hert, J., *et al.* Identifying mechanism-of-action targets for drugs and probes. *Proc. Natl. Acad. Sci. USA* **109(28)**, 11178-11183 (2012).
6. Demoruelle, M.K. and Deane, K. Antibodies to citrullinated protein antigens (ACPAs): Clinical and pathophysiologic significance. *Curr. Rheumatol. Rep.* **13(5)**, 421-430 (2011).
7. Brewer, R.C., Lanz, T.V., Hale, C.R., *et al.* Oral mucosal breaks trigger anti-citrullinated bacterial and human protein antibody responses in rheumatoid arthritis. *Sci. Transl. Med.* **15(684)**, eabq8476 (2023).
8. Thålin, C., Lundström, S., Seignez, C., *et al.* Citrullinated histone H3 as a novel prognostic blood marker in patients with advanced cancer. *PLoS One* **13(1)**, e0191231 (2018).
9. Ishigami, A., Masutomi, H., Handa, S., *et al.* Mass spectrometric identification of citrullination sites and immunohistochemical detection of citrullinated glial fibrillary acidic protein in Alzheimer's disease brains. *J. Neurosci. Res.* **93(11)**, 1664-1674 (2015).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM