

PRODUCT INFORMATION

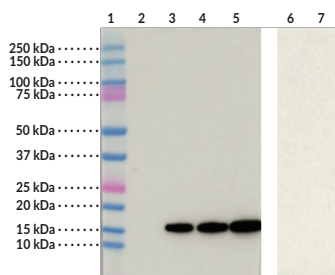
Histone H3 (Citrullinated R2+R8+R17+R26) Monoclonal Antibody (Clone 7A4E11)

Item No. 45875

Overview and Properties

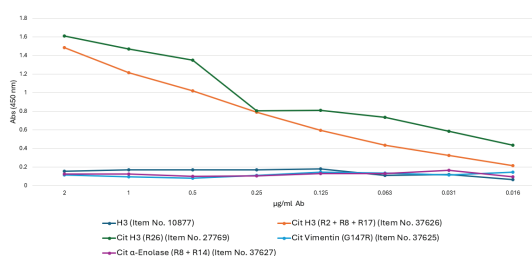
Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	Citrullinated Histone H3 (R2, R8, R17, R26), H3R26Cit
Immunogen:	Histone H3 peptide with citrulline at R2, R8, R17, and R26
Cross Reactivity:	(+) Citrullinated histone H3 (R2+R8+R17+26); (-) Non-citrullinated histone H3 and other proteins
Species Reactivity:	(+) Human; other species not tested
Molecular Weight:	~15.5 kDa
Uniprot No.:	P68431
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	7A4E11
Host:	Mouse
Isotype:	IgG1κ
Applications:	ELISA and Western blot (WB); the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. Antibody has also been published to be effective for immunofluorescence (IF) and neutralizing applications. https://doi.org/10.3389/fimmu.2021.761345

Images



Lane 1: MW Markers
Lane 2: Histone H3 (human, recombinant) (Item No. 10263) (50 ng)
Lane 3: Histone H3 (human, recombinant; PAD4 citrullinated) (Item No. 17926) (5 ng)
Lane 4: Histone H3 (human, recombinant; PAD4 citrullinated) (Item No. 17926) (10 ng)
Lane 5: Histone H3 (human, recombinant; PAD4 citrullinated) (Item No. 17926) (25 ng)
Lane 6: Citrullinated Interleukin-6 (human, recombinant) (Item No. 30173) (25 ng)
Lane 7: Human Fibrinogen (PAD4 Citrullinated) (Item No. 400076) (25 ng)

Western Blot. Reduced protein samples were run on SDS-PAGE, transferred to nitrocellulose, and probed with the Histone H3 (Citrullinated R2+R8+R17+R26) Monoclonal Antibody (Clone 7A4E11) (Item No. 45875) followed by Goat Anti-Mouse IgG HRP (Item No. 10004302) secondary antibody.



ELISA. Indicated proteins were coated at 1 µg/ml and plates blocked with 1% BSA, followed by probing with Histone H3 (Citrullinated R2+R8+R17+R26) Monoclonal Antibody (Clone 7A4E11) (Item No. 45875) and Goat Anti-Mouse IgG HRP (Item No. 10004302) secondary antibody.

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.

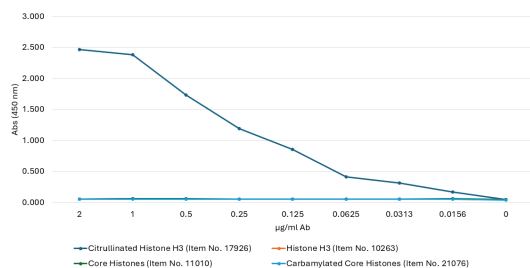
WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 09/24/2026

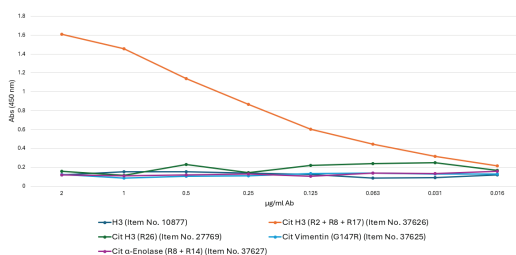
CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION

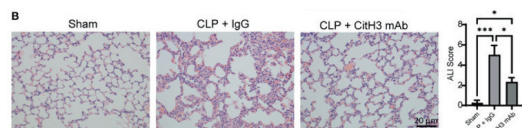
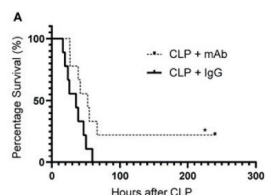
Images cont.



ELISA. Indicated proteins were coated at 1 µg/ml and plates blocked with 1% BSA, followed by probing with Histone H3 (Citullinated R2+R8+R17+R26) Monoclonal Antibody (Clone 7A4E11) (Item No. 45875) and Goat Anti-Mouse IgG HRP (Item No. 10004302) secondary antibody.



ELISA. Indicated proteins were coated at 1 µg/ml and plates blocked with 1% BSA, followed by probing with Histone H3 (Citullinated R2+R8+R17+R26) Monoclonal Antibody (Clone 7A4E11) (Item No. 45875) and Goat Anti-Mouse IgG HRP (Item No. 10004302) secondary antibody.



Neutralization of CitH3 in a murine cecal ligation and puncture (CLP) model. (A) Survival curve of mice with or without CitH3 monoclonal antibody in the CLP model. (n = 9/group) (B) H&E staining in murine lung and the acute lung injury (ALI) score for sham, CLP with IgG, or CitH3 monoclonal antibody groups at 24 h.

<https://doi.org/10.3389/fimmu.2021.761345>

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

Histone H3 is a nuclear protein and a component of the nucleosome core that is essential for organizing genomic DNA in eukaryotic nuclei.¹ It is a globular protein that contains an unstructured N-terminal tail that extends outside of the nucleosome core and is subject to various post-translational modifications, including citrullination. Histone H3 is subject to citrullination of arginine residues by peptidyl arginine deiminase 2 (PAD2) and PAD4 at positions 2, 8, 17, and 26, and this citrullination blocks methylation of these residues by protein-arginine methyltransferase 4 (PRMT4) and modulates the transcription of target genes. Citrullinated histone H3 is a component of neutrophil extracellular traps (NETs) that acts as an autoantigen to induce the production of anti-citrullinated protein antibodies associated with various diseases such as sepsis, multiple sclerosis, rheumatoid arthritis, and multiple myeloma.¹⁻⁴ Increased serum levels of histone H3 citrullinated at R2, R8, and R17 have been found in patients with asthma and in septic shock patients where they are positively associated with a sequential organ failure assessment (SOFA) score and poor survival.^{5,6} Citrullination of histone H3 at R26 can be induced by estradiol (Item No. 10006315) and activates transcription mediated by estrogen receptor α (ER α) in ER-positive breast cancers *in vitro*.⁷ Cayman's Histone H3 (citrullinated R2 + R8 + R17 + R26) Monoclonal Antibody can be used for ELISA and Western Blot (WB) and as a neutralizing antibody. This antibody recognizes citrullinated histone H3 (R2 + R8 + R17 + R26) at approximately 15.5 kDa.

References

1. Xu, Y.-M., Du, J.-Y., and Lau, A.T.Y. Posttranslational modifications of human histone H3: An update. *Proteomics* **14**(17-18), 2047-2060 (2014).
2. Li, Y., Liu, Z., Liu, B., *et al.* Citrullinated histone H3: A novel target for the treatment of sepsis. *Surgery* **156**(2), 229-234 (2014).
3. Moscarello, M.A., Mastronardi, F.G., and Wood, D.D. The role of citrullinated proteins suggests a novel mechanism in the pathogenesis of multiple sclerosis. *Neurochem. Res.* **32**(2), 251-256 (2007).
4. McNee, G., Eales, K.L., Wei, W., *et al.* Citrullination of histone H3 drives IL-6 production by bone marrow mesenchymal stem cells in MGUS and multiple myeloma. *Leukemia* **31**(2), 373-381 (2017).
5. Kuczia, P., Zuk, J., Iwaniec, T., *et al.* Citrullinated histone H3, a marker of extracellular trap formation, is increased in blood of stable asthma patients. *Clin. Transl. Allergy* **10**, 31 (2020).
6. Tian, Y., Russo, R.M., Li, Y., *et al.* Serum citrullinated histone H3 concentrations differentiate patients with septic versus non-septic shock and correlate with disease severity. *Infection* **49**(1), 83-93 (2021).
7. 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).

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