

# PRODUCT INFORMATION

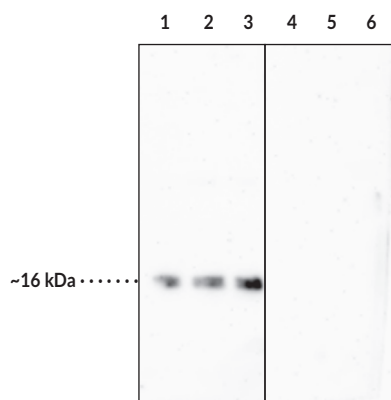


## Histone H3 (Citrullinated R2 + R8 + R17) Monoclonal Antibody (11D3) Item No. 17939

### Overview and Properties

<b>Contents:</b>	This vial contains 100 µg protein G-purified IgG
<b>Immunogen:</b>	Histone 3 peptide with citrullinations at R2, R8, and R17
<b>Cross Reactivity:</b>	(-) Non-citrullinated H3
<b>Species Reactivity:</b>	(+) Human; other species not tested
<b>Uniprot No.:</b>	P68431
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	PBS, pH 7.2 with 50% glycerol and 0.02% sodium azide
<b>Clone:</b>	11D3
<b>Host:</b>	Mouse
<b>Isotype:</b>	IgG1
<b>Applications:</b>	ELISA and Western blot; the recommended starting dilution is 1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Image



Lane 1: Citrullinated Human H3 (10 ng)  
Lane 2: Citrullinated Human H3 (25 ng)  
Lane 3: Citrullinated Human H3 (50 ng)  
Lane 4: Histone H3 (human recombinant) (Item No. 10263) (10 ng)  
Lane 5: Histone H3 (human recombinant) (Item No. 10263) (25 ng)  
Lane 6: Histone H3 (human recombinant) (Item No. 10263) (50 ng)

#### 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.

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## Description

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Histones are nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes. The basic structure is a 146 bp strand of DNA wrapped around a histone octamer containing pairs of the four core histones (H2A, H2B, H3, and H4). Histones are subjected to numerous post-translational modifications including citrullination (de-amination). Citrullination is necessary for the development of neutrophil extracellular traps (NETs) (hyper-citrullination of histones by PAD4).<sup>1,2</sup> NETs are a part of the inflammatory response, and neutrophils use NETs to trap and eradicate bacteria and fungi. Failure to clear citrullinated proteins and NET components following inflammation can result in the production of autoantibodies and anti-citrullinated protein antibodies.<sup>3</sup> The persistence of these antibodies and citrullinated proteins is associated with a number of human diseases including rheumatoid arthritis, systemic lupus erythematosus, Alzheimer's disease, and multiple sclerosis.<sup>4</sup> The ability to effectively detect the presence of citrullinated proteins is difficult and presents a barrier to further the understanding of these pathologies. Cayman's Histone H3 (Citrullinated R2 + R8 + R17) Monoclonal Antibody detects citrullinated human H3 by Western blot, and does not detect unmodified H3.

## References

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1. Baka, Z., György, B., Géher, P., *et al.* Citrullination under physiological and pathological conditions. *Joint Bone Spine* **79**, 431-436 (2012).
2. Neeli, I. and Radic, M. Knotting the NETs: Analyzing histone modifications in neutrophil extracellular traps. *Arthritis Research & Therapy* **14(2)**, 1-2 (2012).
3. Foulquier, C., Sebbag, M., Clavel, C., *et al.* Peptidyl arginine deiminase type 2 (PAD-2) and PAD-4 but not PAD-1, PAD-3, and PAD-6 are expressed in rheumatoid arthritis synovium in close association with tissue inflammation. *Arthritis and Rheumatism* **56(11)**, 3541-3553 (2007).
4. Horibata, S., Coonrod, S.A. and Cherrington, B.D. Role for peptidylarginine deiminase enzymes in disease and female reproduction. *Journal of Reproduction and Development* **58(3)**, 274-282 (2012).

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