PRODUCT INFORMATION

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

Overview and Properties

Contents: This vial contains 100 µg protein G-purified IgG
Immunogen: Histone 3 peptide with citrullinations at R2, R8, and R17
Cross Reactivity: (-) Non-citrullinated H3
Species Reactivity: (+) Human; other species not tested
Uniprot No.: P68431
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥1 year
Storage Buffer: PBS, pH 7.2 with 50% glycerol and 0.02% sodium azide
Clone: 11D3
Host: Mouse
Isotype: IgG1
Applications: 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)

~16 kDa · · · · · · ·
Description

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-imination). Citrullination is necessary for the development of neutrophil extracellular traps (NETs) (hyper-citrullination of histones by PAD4).\(^1\)\(^2\) 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.\(^3\) 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.\(^4\) 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