

Rabbit Anti-Histone H3 Citrullinated/H3Cit [MD323R]: RM0110

Intended Use: For Research Use Only

Description: Histone H3 is one of the five main histone proteins involved in the structure of chromatin in eukaryotic cells. Featuring a main globular domain and a long N-terminal tail, H3 is involved with the structure of the nucleosomes of the 'beads on a string' structure. Histone posttranslational modifications, such as methylation, acetylation, ubiquitination and citrullination can have profound effects on their structure and function and have been linked to various diseases. Citrullinated histone H3 (H3Cit) is the product of the posttranslational conversion of peptidyl arginine to citrulline on the N-terminal of histone H3. The subsequent decrease in positive charge of the histone residue results in a weaker binding to the negatively charged DNA, leading to chromatin decondensation. Histone citrullination is catalyzed by the enzyme peptidylarginine deiminase 4 (PAD4). H3Cit is a central marker 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 lupus. Histone hypercitrullination via PAD4 may also play a role in the progression of various cancers including multiple myeloma, acute myeloid leukemia, lung cancer, and hepatocellular carcinoma. H3Cit is a potential diagnostic and prognostic blood marker associated with an exacerbated inflammatory response in patients with advanced cancer. This antibody recognizes histone H3 citrullinated at residue Arg17, and perhaps residue Arg26, but does not cross-react with any other known citrullinated or methylated arginine residues on histone H3.

Specifications:

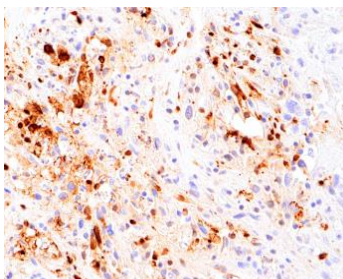
Clone: MD323R
 Source: Rabbit
 Isotype: IgG
 Reactivity: Human, mouse
 Immunogen: Synthetic peptide corresponding to the amino terminus of histone H3 citrullinated at Arg17
 Localization: Nucleus, chromosome
 Formulation: Protein A affinity Antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN3)
 Storage: Store at 2°- 8°C
 Applications: IHC, WB
 Package:

Description	Catalog No.	Size
Histone H3 Citrullinated/H3Cit [MD323R] Concentrated	RM0110	1 ml

IHC Procedure*:

Positive Control Tissue: HCC, renal cell carcinoma, acute myeloid leukemia
 Concentrated Dilution: 25-200
 Pretreatment: Tris EDTA pH9.0, 15 minutes Pressure Cooker or 30-60 minutes water bath at 95°-99°C
 Incubation Time and Temp: 30-60 minutes @ RT
 Detection: Refer to the detection system manual

* Result should be confirmed by an established diagnostic procedure.



FFPE human pulmonary sarcoma stained with anti-H3Cit using DAB

References:

1. Citrullination of histone H3 drives IL-6 production by bone marrow mesenchymal stem cells in MGUS and multiple myeloma. G McNee, et al. *Leukemia*. Feb;31(2):373-381, 2017.
2. NETosis as Source of Autoantigens in Rheumatoid Arthritis. Elisa Corsiero, et al. *Front Immunol*. Nov 14;7:485.2016.