

Rabbit Anti-Histone H3 K36M Mutant/H3K36M [RM193]: RM0207

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. The N-terminal tail of histone H3 protrudes from the globular nucleosome core and can undergo several different types of epigenetic modifications that influence cellular processes. These modifications include the covalent attachment of methyl or acetyl groups to lysine and arginine amino acids and the phosphorylation of serine or threonine. Histone H3 variants H3.1, H3.2 and H3.3 have been implicated in the epigenetic memory of cellular state. Genome-wide patterns of H3 are dependent on amino acid sequence and change with cellular differentiation at developmentally regulated loci. Somatic missense mutations in histone H3 genes are found in several pediatric brain and bone malignancies, among which ~90% of the chondroblastomas are identified with histone H3 K36M mutation (H3K36M). Loss of H3K36 methylation due to H3K36M mutation causes a genome-wide upregulation of H3K27 methylation, leading to an altered polycomb repressive complex 1 (PRC1) distribution and re-activation of PRC1-suppressed target genes involved in mesenchymal differentiation.

Specifications:

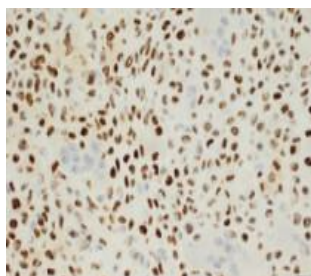
Clone: RM193
 Source: Rabbit
 Isotype: IgG
 Reactivity: Human
 Localization: Nucleus, chromosome
 Formulation: Antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN₃)
 Storage: Store at 2°- 8°C
 Applications: IHC, ELISA, ICC/IF, WB
 Package:

Description	Catalog No.	Size
Histone H3 K36M Mutant/H3K36M Concentrated	RM0207	1 ml

IHC Procedure*:

Positive Control Tissue: 293T cells transfected with a DNA construct encoding Histone H3 K36M Mutant
 Concentrated Dilution: 10-100
 Pretreatment: Citrate pH6.0 or EDTA pH8.0, 15 min Pressure Cooker or 30-60 min 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 Chondroblastoma tumor tissue stained with anti-Histone H3 K36M using DAB
 Image courtesy of Adrienne Flanagan, Department of Histopathology, RONS, Stanmore, Middlesex, UK

References:

1. H3F3 K36M Immunohistochemistry is a Useful Diagnostic Marker for Chondroblastoma in Small Biopsy Specimens. Frye J, et al. Mod Pathol. 2018.
2. The H3F3 K36M mutant antibody is a sensitive and specific marker for the diagnosis of chondroblastoma. Amary MF, et al. Histopathology. 10.1111/his.12945, 2016.
3. Immunohistochemistry for histone H3G34W and H3K36M is highly specific for giant cell tumor of bone and chondroblastoma, respectively, in FNA and core needle biopsy. Schaefer IM, et al. Cancer Cytopathol. 10.1002/cncy.22000, 2018.

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