

ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195]

Package: 50 µg
Store at: -20°C

Summary

Product Description	Rabbit Monoclonal antibody [RM195] recognizes Histone H4 monomethyl (Arg3)
Tested Reactivity	Hu
Tested Application	ICC/IF, WB
Specificity	This antibody reacts to Histone H4 monomethylated at Arginine 3 (R3me1). No cross reactivity with unmodified Arginine 3, asymmetric or symmetric dimethylated Arginine 3, and citrullinated Arginine 3 in Histone H4.
Host	Rabbit
Clonality	Monoclonal
Clone	RM195
Isotype	IgG
Target Name	Histone H4
Species	Others
Immunogen	A monomethyl -peptide corresponding to the Monomethyl -Histone H4 (Arg3).
Conjugation	Un-conjugated
Alternate Names	H4/p; Histone H4

Application Instructions

Application table	Application	Dilution
	ICC/IF	1 - 2 µg/ml
	WB	0.5 - 2 µg/ml

Application Note * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

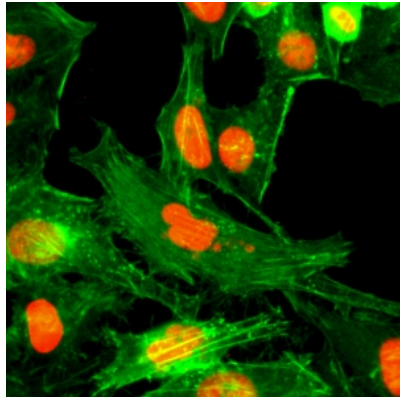
Properties

Form	Liquid
Purification	Purification with Protein A.
Buffer	PBS, 0.09% Sodium azide, 50% Glycerol and 1% BSA.
Preservative	0.09% Sodium azide
Stabilizer	50% Glycerol and 1% BSA
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note For laboratory research only, not for drug, diagnostic or other use.

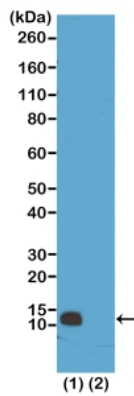
Bioinformation

Database links	GeneID: 121504 Human Swiss-port # P62805 Human
Gene Symbol	HIST4H4
Gene Full Name	histone cluster 4, H4
Background	Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes. Nucleosomes consist of approximately 146 bp of DNA wrapped around a histone octamer composed of pairs of each of the four core histones (H2A, H2B, H3, and H4). The chromatin fiber is further compacted through the interaction of a linker histone, H1, with the DNA between the nucleosomes to form higher order chromatin structures. This gene is intronless and encodes a replication-dependent histone that is a member of the histone H4 family. Transcripts from this gene lack polyA tails; instead, they contain a palindromic termination element. [provided by RefSeq, Aug 2015]
Function	Core component of nucleosome. Nucleosomes wrap and compact DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones, also called histone code, and nucleosome remodeling. [UniProt]
PTM	Acetylation at Lys-6 (H4K5ac), Lys-9 (H4K8ac), Lys-13 (H4K12ac) and Lys-17 (H4K16ac) occurs in coding regions of the genome but not in heterochromatin. Citrullination at Arg-4 (H4R3ci) by PADI4 impairs methylation. Monomethylation and asymmetric dimethylation at Arg-4 (H4R3me1 and H4R3me2a, respectively) by PRMT1 favors acetylation at Lys-9 (H4K8ac) and Lys-13 (H4K12ac). Demethylation is performed by JMJD6. Symmetric dimethylation on Arg-4 (H4R3me2s) by the PRDM1/PRMT5 complex may play a crucial role in the germ-cell lineage. Monomethylated, dimethylated or trimethylated at Lys-21 (H4K20me1, H4K20me2, H4K20me3). Monomethylation is performed by SET8. Trimethylation is performed by KMT5B and KMT5C and induces gene silencing. Phosphorylated by PAK2 at Ser-48 (H4S47ph). This phosphorylation increases the association of H3.3-H4 with the histone chaperone HIRA, thus promoting nucleosome assembly of H3.3-H4 and inhibiting nucleosome assembly of H3.1-H4. Ubiquitinated by the CUL4-DDB-RBX1 complex in response to ultraviolet irradiation. This may weaken the interaction between histones and DNA and facilitate DNA accessibility to repair proteins. Monoubiquitinated at Lys-92 of histone H4 (H4K91ub1) in response to DNA damage. The exact role of H4K91ub1 in DNA damage response is still unclear but it may function as a licensing signal for additional histone H4 post-translational modifications such as H4 Lys-21 methylation (H4K20me). Sumoylated, which is associated with transcriptional repression. Crotonylation (Kcr) is specifically present in male germ cells and marks testis-specific genes in post-meiotic cells, including X-linked genes that escape sex chromosome inactivation in haploid cells. Crotonylation marks active promoters and enhancers and confers resistance to transcriptional repressors. It is also associated with post-meiotically activated genes on autosomes.



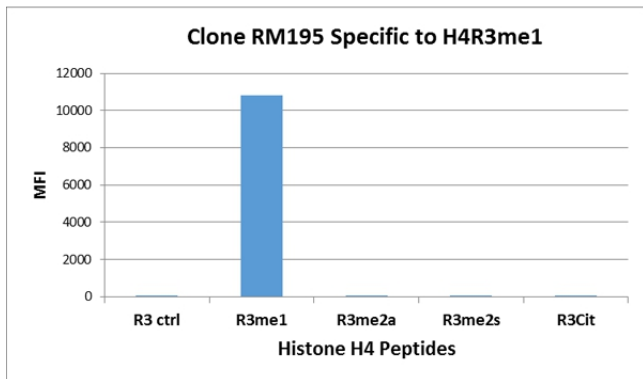
ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] ICC/IF image

Immunofluorescence: HeLa cells treated with sodium butyrate, stained with ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] (red). Actin filaments have been labeled with fluorescein phalloidin (green).



ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] WB image

Western blot: 1) Acid extracts of HeLa cells, 2) Recombinant Histone H4 stained with ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] at 0.5 $\mu\text{g/ml}$, showed a band of Histone monomethylated at Arginine3 in HeLa cells.



ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] Specificity test image

ARG57251 anti-Histone H4 monomethyl (Arg3) antibody [RM195] specifically reacts to Histone H4 mono-methylated at Arginine 3 (R3me1). No cross reactivity with unmodified Arg 3 (R3 ctrl), asymmetric dimethylated Arg 3 (R3me2a) or symmetric dimethylated Arg 3 (R3me2s), and citrullinated Arg 3 (R3Cit) in Histone H4.