


Histone H4 (acetyl K16) Quantification Kit (Colorimetric) ab115120

Overview

Product name	Histone H4 (acetyl K16) Quantification Kit (Colorimetric)
Detection method	Colorimetric
Sample type	Tissue, Adherent cells, Suspension cells
Sensitivity	2 ng/ml
Range	20 ng/well - 5000 ng/well
Assay time	2h 30m
Species reactivity	Reacts with: Mouse, Human
	Predicted to work with: Mammals 

Product overview	<p>Acetylation of histones such histone H4 has been involved in the regulation of chromatin structure and the recruitment of transcription factors to gene promoters. HATs (histone acetyltransferases) and HDACs (histone deacetylases) play a critical role in controlling histone H4 acetylation. Histone H4 (acetyl K16) reflects the hyperacetylated state in histone H4 and strongly correlates with active state of genes. H4 (acetyl K16) is also related to euchromatin and DNA repair, while hypoacetylation of H4(K16) is commonly found in human tumors.</p> <p>Abcam's Histone H4 (acetyl K16) Quantification Kit (Colorimetric) (ab115120) allows the experimenter to measure global acetylation of histone H4K16 quickly and consistently. The kit is ready-to-use and provides all the essential components needed to carry out a successful assay experiment and it is suitable for specifically measuring global histone H4K16 acetylation using a variety of mammalian cells including fresh and frozen tissues, and cultured adherent and suspension cells.</p>
Platform	Microplate reader

Properties

Storage instructions	Please refer to protocols.
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Components	Identifier	48 tests	96 tests
10X Wash Buffer		1 x 10ml	1 x 20ml
8-Well Sample Strips (with Frame)		4 units	9 units

Components	Identifier	48 tests	96 tests
8-Well Standard Control Strips	Green Ringed	2 units	3 units
Antibody Buffer		1 x 6ml	1 x 12ml
Color Developer		1 x 5ml	1 x 10ml
Detection Antibody, 1 mg/mL		1 x 5µl	1 x 10µl
Signal Enhancer		1 x 120µl	1 x 240µl
Signal Report Solution		1 x 5µl	1 x 10µl
Standard Control, 100 µg/mL		1 x 10µl	1 x 20µl
Stop Solution		1 x 3ml	1 x 6ml

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.

Sequence similarities

Belongs to the histone H4 family.

Post-translational modifications

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 PAD4 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 SUV420H1 and SUV420H2 and induces gene silencing.

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.

Cellular localization

Nucleus. Chromosome.

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