abcam

Product datasheet

Histone H3 (tri methyl K27) Assay Kit (In Situ) ab115045

画像数 1

医薬用外劇物

製品の概要

製品名	Histone H3 (tri methyl K27) Assay Kit (In Situ)
検出方法	Colorimetric
サンプルの種類	Adherent cells
アッセイタイプ	Cell-based (quantitative)
全工程の試験時間	3h 00m
種交差性	**交差種:** Mouse, Human **交差が予測される動物種:** Mammals
製品の概要	Methylation of histone H3 at lysine 27 has an important role in transcription repression and it is catalyzed by G9a and Polycomb Groups enzymes such as EZH2. In particular, tri-methylation of histone H3 at lysine 27 (H3 (tri methyl K27)) is a facultative heterochromatin mark, which promotes the recruitment of polycomb group proteins for gene silencing. Increased global histone H3 (tri methyl K27) is also found to be involved in some pathological processes such as cancer progression. Histone H3 (tri methyl K27) Assay Kit (In Situ) (ab115045) allows the user to specifically measure histone H3K27me3 in situ using cultured adherent cells in a quick and efficient procedure which can be finished within 3 hours.
試験プラットフォーム	Microplate reader

製品の特性

保存方法	Please refer to protocols.

内容	96 tests	2 x 96 tests
10X Wash Buffer	1 x 30ml	2 x 30ml
30% H_2O_2 Solution	1 x 0.5ml	1 x 1ml
8-Well Control Strips	2 units	4 units
Antibody Buffer	1 x 10ml	1 x 20ml

内容	96 tests	2 x 96 tests
Blocking Buffer	1 x 20ml	2 x 20ml
Capture Antibody, 1000 µg/mL	1 x 9µl	1 x 18µl
Detection Antibody, 200 µg/mL	1 x 10µl	1 x 20µl
Developing Solution	1 x 12ml	1 x 24ml
H3K27me3 Control, 20 µg/mL	1 x 15µl	1 x 30µl
Microplate	1 unit	2 units
Permeabilizing Buffer	1 x 30ml	2 x 30ml
Stop Solution	1 x 6ml	1 x 12ml

機能

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.

配列類似性

Belongs to the histone H3 family.

発生段階

Expressed during S phase, then expression strongly decreases as cell division slows down during the process of differentiation.

翻訳後修飾

Acetylation is generally linked to gene activation. Acetylation on Lys-10 (H3K9ac) impairs methylation at Arg-9 (H3R8me2s). Acetylation on Lys-19 (H3K18ac) and Lys-24 (H3K24ac) favors methylation at Arg-18 (H3R17me).
Citrullination at Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PADI4 impairs methylation and represses transcription.
Asymmetric dimethylation at Arg-18 (H3R17me2a) by CARM1 is linked to gene activation.
Symmetric dimethylation at Arg-9 (H3R8me2s) by PRMT5 is linked to gene repression.
Asymmetric dimethylation at Arg-3 (H3R2me2a) by PRMT6 is linked to gene repression and is mutually exclusive with H3 Lys-5 methylation (H3K4me2 and H3K4me3). H3R2me2a is present at the 3' of genes regardless of their transcription state and is enriched on inactive promoters, while it is absent on active promoters.
Methylation at Lys-5 (H3K4me), Lys-37 (H3K36me) and Lys-80 (H3K79me) are linked to gene activation. Methylation at Lys-5 (H3K4me) facilitates subsequent acetylation of H3 and H4. Methylation at Lys-80 (H3K79me) is associated with DNA double-strand break (DSB) responses and is a specific target for TP53BP1. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are linked to gene repression. Methylation at Lys-10 (H3K9me) is a specific target for HP1 proteins (CBX1, CBX3 and CBX5) and prevents subsequent phosphorylation at Ser-11 (H3S10ph) and acetylation of H3 and H4. Methylation at Lys-5 (H3K4me) and Lys-80 (H3K79me) require preliminary monoubiquitination of H2B at 'Lys-120'. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are enriched in inactive X chromosome chromatin.
Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase and dephosphorylated during anaphase. Phosphorylation at Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. In addition phosphorylation at Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes following external stimulation, like mitogens, stress, growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun.

Phosphorylation at Ser-11 (H3S10ph), which is linked to gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation at Ser-11 (H3S10ph) by AURKB mediates the dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin. Phosphorylation at Ser-11 (H3S10ph) is also an essential regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 (H3S28ph) by MLTK isoform 1, RPS6KA5 or AURKB during mitosis or upon ultraviolet B irradiation. Phosphorylation at Thr-7 (H3T6ph) by PRKCBB is a specific tag for epigenetic transcriptional activation that prevents demethylation of Lys-5 (H3K4me) by LSD1/KDM1A. At centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, by DAPK3 and PKN1. Phosphorylation at Thr-12 (H3T11ph) by PKN1 is a specific tag for epigenetic transcriptional activation that promotes demethylation of Lys-10 (H3K9me) by KDM4C/JMJD2C. Phosphorylation at Tyr-42 (H3Y41ph) by JAK2 promotes exclusion of CBX5 (HP1 alpha) from chromatin.
Monoubiquitinated by RAG1 in lymphoid cells, monoubiquitination is required for V(D)J recombination (By similarity). 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.

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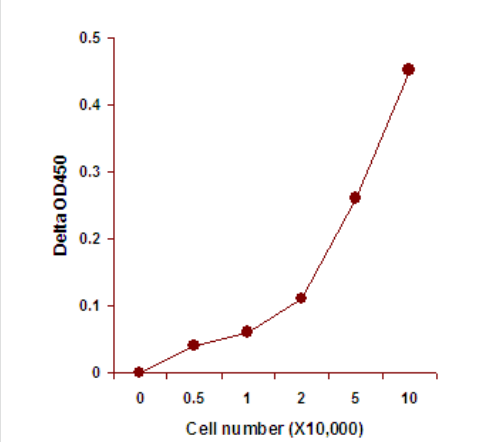
画像



Functional Studies - Histone H3 (tri methyl K27) Assay Kit (In Situ) (ab115045)

ab115045 detecting Histone H3 (tri methyl K27) in MDA-231 cancer cells. Cells were grown in microplate wells for 48 hours.

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