Revision 5

Store at 4°C

#7121

PathScan® Acetyl-Histone H3 (Lys9) Sandwich ELISA Kit

1 Kit (96 assays)

UniProt ID: #P68431

Entrez-Gene Id: #8350

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Color	Storage Temp
Acetyl-Histone H3 (K9) Rabbit mAb Coated Microwells	73853	96 tests		4°C
Histone H3 Mouse Detection mAb	14221	1 ea	Green (Lyophilized)	4°C
Anti-mouse IgG, HRP-linked Antibody (ELISA Formulated)	13304	1 ea	Red (Lyophilized)	4°C
Detection Antibody Diluent	13339	11 ml	Green	4°C
HRP Diluent	13515	11 ml	Red	4°C
TMB Substrate	7004	11 ml		4°C
STOP Solution	7002	11 ml		4°C
Sealing Tape	54503	2 ea		4°C
ELISA Wash Buffer (20X)	9801	25 ml		4°C
ELISA Sample Diluent	11083	25 ml	Blue	4°C
Cell Lysis Buffer (10X)	9803	15 ml		-20°C

*The microwell plate is supplied as 12 8-well modules - Each module is designed to break apart for 8 tests.

Description

The PathScan® Acetyl-Histone H3 (Lys9) Sandwich ELISA Kit is a solid phase sandwich enzyme-linked immunosorbent assay (ELISA) that detects endogenous levels of histone H3 when acetylated at Lys9. An Acetyl-Histone H3 (Lys9) Rabbit Antibody has been coated onto the microwells. After incubation with cell lysates, acetyl-histone H3 (Lys9) is captured by the coated antibody. Following extensive washing, Histone H3 Mouse mAb is added to detect the histone H3 protein.
Anti-Mouse IgG, HRP-linked Antibody is then used to recognize the bound detection antibody. HRP substrate, TMB, is added to develop color. The magnitude of the absorbance for this developed color is proportional to the quantity of histone H3 acetylated at Lys9.

*Antibodies in this kit are custom formulations specific to kit.

Specificity/Sensitivity

CST's PathScan® Acetyl-Histone H3 (Lys9) Sandwich ELISA Kit #7121 detects endogenous levels of histone H3 when acetylated at Lys9. As shown in Figure 1 using the Acetyl-Histone H3 (Lys9) Sandwich ELISA Kit #7121, a high level of acetylation at Lys9 on histone H3 is detected in COS cells when treated with TSA. The level of total histone H3 (modified and unmodified) remains unchanged as shown by Western analysis (Figure 1). Similar results are obtained when NIH/3T3 and Jurkat cells are treated with TSA (data not shown). This kit detects proteins from the indicated species, as determined through in-house testing, but may also detect homologous proteins from other species.

Background

Modulation of chromatin structure plays an important role in the regulation of transcription in eukaryotes. The nucleosome, made up of DNA wound around eight core histone proteins (two each of H2A, H2B, H3, and H4), is the primary building block of chromatin (1). The amino-terminal tails of core histones undergo various posttranslational modifications, including acetylation, phosphorylation, methylation, and ubiquitination (2-5). These modifications occur in response to various stimuli and have a direct effect on the accessibility of chromatin to transcription factors and, therefore, gene expression (6). In most species, histone H2B is primarily acetylated at Lys5, 12, 15, and 20 (4,7). Histone H3 is primarily acetylated at Lys9, 14, 18, 23, 27, and 56. Acetylation of H3 at Lys9 appears to have a dominant role in histone deposition and chromatin assembly in some organisms (2,3). Phosphorylation at Ser10, Ser28, and Thr11 of histone H3 is tightly correlated with chromosome condensation during both mitosis and meiosis (8-10). Phosphorylation at Thr3 of histone H3 is highly conserved among many species and is catalyzed by the kinase haspin. Immunostaining with phospho-specific antibodies in mammalian cells reveals mitotic phosphorylation at Thr3 of H3 in prophase and its dephosphorylation during anaphase (11).

Background References

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Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses