



# Pan-Methyl Histone H3-K36 Quantification Kit (Colorimetric)

## Product Information

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### Cat.No.

Kit-0651

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### Product Overview

Pan-Methyl Histone H3-K36 Quantification Kit (Colorimetric) is use for measuring mono-, di-and trimethylation of histone H3-K36.

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### Description

Epigenetic activation or inactivation of genes plays a critical role in many important human diseases, especially in cancer. A major mechanism for epigenetic inactivation of the genes is methylation of CpG islands in genome DNA caused by DNA methyltransferases. Histone methyltransferases (HMTs) control or regulate DNA methylation through chromatin-dependent transcription repression or activation. HMTs transfer 1-3 methyl groups from S-adenosyl-L-methionine to the lysine and arginine residues of histone proteins. SET2 is a histone methyltransferase that catalyzes methylation of histone H3 at lysine 36 (H3-K36) in mammalian cells. H3-K36 mono-methylation is commonly found together with dimethylation of H3-K27 and associated with transcriptionally silenced genes. H3-K36 di- and tri-methylations are associated with transcriptionally active genes. Increased H3-K36 methylation is also found to be linked to the Sotos syndrome and leukemia-associated protein NSD1 and the Huntington disease protein HYPB. The patterns of H3-K36 methylation can be changed by inhibition or activation of HMTs. Thus quantitative detection of mono, di-, and tri-methyl histone H3-K36 would provide useful information for better understanding epigenetic regulation of gene activation and for developing HMT targeted drugs. The Pan-Methyl Histone H3-K36 Quantification Kit (Colorimetric) provides a tool for measuring mono-, di- and trimethylation of histone H3-K36.

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### Applications

For specifically measuring histone H3-K36 mono-, di-, and tri-methylation using a variety of mammalian cells (human, mouse, etc.) including fresh and frozen tissues, cultured adherent and suspension cells.

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## Pan-Methyl Histone H3-K36 Quantification Kit (Colorimetric)

### Usage

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For research use only (RUO)

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### Storage

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Upon receipt, store C3 and Standard control at  $-20^{\circ}\text{C}$ . Store all other components at  $4^{\circ}\text{C}$  away from light. The components of the kit should be stable for 6 months when stored properly. Note: Check if buffers C1 and C2 contain salt precipitates before using. If so, warm (at room temperature or  $37^{\circ}\text{C}$ ) and shake the buffers until the salts are redissolved.

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### Kit Components

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C1 (10X wash buffer) 20 ml C2 (antibody buffer) 12 ml C3 (detection antibody, 1 mg/ml)\* 10  $\mu\text{l}$  C4 (color developer) 10  $\mu\text{l}$  C5 (stop solution) 6 ml Standard control (100  $\mu\text{g}/\text{ml}$ )\* 20  $\mu\text{l}$  8 well sample strips (with frame) 98 well standard control strips\* 3\* For maximum recovery of the products, centrifuge the original vial after thawing prior to opening the cap.

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### Features & Benefits

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Quick and efficient procedure, which can be finished within 2.5 hours. Innovative colorimetric assay with no need for radioactivity, electrophoresis, and chromatography. Simultaneous quantification of mono-, di-, and tri-methylated H3-K36 with the detection limit as low as 2 ng/well and detection range from 20 ng-5  $\mu\text{g}/\text{well}$  of histone extracts. The control is conveniently included for quantification of the amount of mono-, di-, and tri-methylated H3-K36. Strip microplate format makes the assay flexible: manual or high throughput. Simple, reliable, and consistent assay conditions.

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