Pan-Methyl Histone H3-K4 Quantification Kit (Fluorometric)

Cat. No. Kit-0654 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Pan-Methyl Histone H3-K4 Quantification Kit (Fluorometric) is use for measuring mono-, di-and tri-methylation of histone H3-K4.
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. SET1, SET7/9, Ash1, ALL-1, MLL, ALR, Trx, and SMYD3 are histone methyltransferases that catalyze methylation of histone H3 at lysine 4 (H3-K4) in mammalian cells. H3-K4 monomethylation is associated with silenced euchromatin regions in the genome and may serve as a epigenetic mark and function in gene repression. In contrast, di- and tri-methylation is associated with transcriptionally active euchromatin regions in the genome and may serve as a epigenetic mark of highly transcribed genes. Increased H3-K4 methylation is also found to be involved in some pathological processes such as cancer progression. The patterns of H3-K4 methylation can be also changed by inhibition or activation of HMTs. Thus quantitative detection of the patterns of histone H3-K4 methylation would provide useful information for better understading epigenetic regulation of gene activation and for developing HMT-targeted drugs. The Pan-Methyl Histone H3-K4 Quantification Kit (Colorimetric) provides a tool for measuring mono-, di- and tri-methylation of histone H3-K4.

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Applications	For simultaneously measuring histone H3-K4 mono-, di-, and tri-methylation using a variety of mammalian cells (human, mouse, etc.) including fresh and frozen tissues, cultured adherent and suspension cells.
Usage	For research use only (RUO)
Storage	Upon receipt, store F3, F4 and Standard control at –20°C. Store all other components at 4°C away from light.The components of the kit should be stable for 6 months when stored properly.Note: Check if buffers F1 and F2 contain salt precipitates before using. If so, warm (at room temperature or 37°C) and shake the buffers until the salts are redissolved.
Kit Components	F1 (10X wash buffer) 20 mlF2 (antibody buffer) 12 mlF3 (detection antibody, 1 mg/ml)* 10 µlF4 (fluoro-developer)* 24 µlF5 (fluoro enhancer)* 24 µlF6 (fluoro-dilution) 8 mlStandard control (100 g/ml)* 20 µl8 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.
Features & Benefits	Quick and efficient procedure, which can be finished within 2.5 hours.Innovative fluorometric assay with no need for radioactivity, electrophoresis, and chromatography.Simultaneous quantification of mono-, di-, and tri-methylated H3-K4 with the detection limit as low as 0.2 ng/well and detection range from 20 ng-5 g/well of histone extracts.The control is conveniently included for quantification of the amount of mono-, di- and tri-methylated H3-K4.Strip microplate format makes the assay flexible: manual or high throughput.Simple, reliable, and consistent assay conditions.

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