



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

Product Information

Cat.No.

Kit-0284

Product Overview

Di-Methyl Histone H3-K4 Quantification Kit (Fluorometric) is use for measuring di-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 di-methylation is associated with transcriptionally permissive euchromatin regions in the genome and may serve as a epigenetic mark in euchromatin and mediates activated transcription. Increased H3-K4 di-methylation is also found to be involved in some pathological processes such as cancer progression. The H3-K4 di-methylation can be also changed by inhibition or activation of HMTs. Thus quantitative detection of di-methyl histone H3-K4 would provide useful information for better understanding epigenetic regulation of gene activation and for developing HMT-targeted drugs. The Di-Methyl Histone H3-K4 Quantification Kit (Fluorometric) provides a tool for measuring di-methylation of histone H3-K4.

Applications

For specifically measuring histone H3-K4 di-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)



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Storage

Upon receipt, store F3, F4 and Standard control at -20°C ; (2) Store all other components at 4°C away from light. The kit should be stable for 6 months from the shipment date, 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 re-dissolved.

Kit Components

F1 (10X wash buffer) 20 ml F2 (antibody buffer) 12 ml F3 (detection antibody, 1 mg/ml)* 10 μl F4 (fluoro developer)* 24 μl F5 (fluoro enhancer)* 24 μl F6 (fluoro dilution)* 8 ml Standard control (100 $\mu\text{g}/\text{ml}$)* 20 μl 8 well sample strips (with frame) 98 well standard control strips 3* For maximum recovery of the products, centrifuge the original vial prior to opening the cap.

Features & Benefits

Quick and efficient procedure, which can be finished within 2.5 hours. Innovative fluorometric assay without need for radioactivity, electrophoresis, and chromatography. Specifically capture di-methylated H3-K4 with the detection limit as low as 0.2 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 di-methylated H3-K4. Strip microplate format makes the assay flexible: manual or high throughput. Simple, reliable, and consistent assay conditions.