CREATIVE BIOMART®
Assay Kit

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

Product Information

Cat.No. Kit-0283

Product Overview

Di-Methyl Histone H3-K4 Quantification Kit (Colorimetric) is use for measuring di-methylation of histone H3-K4.

Description

Epigenetic activation or inactivation of genes plays a critical role in many importan 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 inhibiton 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 (Colorimetric) 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)

Storage

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Upon receipt, store C3 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 C1 and C2 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

C1 (10X wash buffer) 20 mlC2 (antibody buffer) 12 mlC3 (detection antibody, 1 mg/ml)* 10 µlC4 (color developer) 10 µlC5 (stop solution) 6 mlStandard control (100 µg/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 colorimetric assay with no need for radioactivity, electrophoresis, and chromatography.Specifically capturing mono-methylated H3-K4 with the detection limit as low as 2 ng/well and detection range from 20 ng-5 µg/well of histone extracts.The control is conveniently included for quantification of the amount of -methylated H3-K4.Strip microplate format makes the assay flexible: manual or high throughput.Simple, reliable, and consistent assay conditions.

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