CREATIVE BIOMART®
Assay Kit

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

Product Information

Cat.No. Kit-0822

Product Overview

Tri-Methyl Histone H3-K4 Quantification Kit (Colorimetric) is use for measuring 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-Lmethionine 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 tri-methylation has been viewed as a signature mark of highly transcribed genes, which is placed exclusively in the 5''- region downstream of the promoter. Increased H3-K4 tri-methylation is also found to be involved in some pathological processes such as cancer progression. The H3-K4 trimethylation can be also changed by inhibition or activation of HMTs. Thus, quantitative detection of tri-methyl histone H3-K4 would provide useful information for better understanding epigenetic regulation of gene activation, and for developing HMT-targeted drugs.

Applications

Tri-Methyl Histone H3-K4 Quantification Kit (Colorimetric) is suitable for specifically measuring histone H3-K4 tri-methylation using a variety of mammalian cells (human, mouse, etc.) including fresh and frozen tissues, and cultured adherent and suspension cells.

Usage

For research use only (RUO)

Storage

Upon receipt, store C3 and Standard control at –20°C. Store all other components at 4°C away from

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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 mlC5 (Stop Solution) 6 mlStandard Control (100 µg/ml)* 20 µl8-well sample strips (with frame) 9 strips8-well standard control strips* 3 strips* 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 hours 30 minutes.Innovative colorimetric assay with no need for radioactivity, electrophoresis, and chromatography.Specifically capturing tri-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 tri-methylated H3-K4.Strip microplate format makes the assay flexible: manual or high throughput.Simple, reliable, and consistent assay conditions.