CREATIVE BIOMART®
Assay Kit

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

Product Information

Cat.No. Kit-0654

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.

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

Tel: 1-631-559-9269 1-516-512-3133
Email:info@creative-biomart.org
Fax:1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

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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 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 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 µg/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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