CREATIVE BIOMART®
Assay Kit

Pan-Methyl Histone H4K20 Quantification Kit (Fluorometric)

Product Information

Cat.No.

Kit-0660

Product Overview

Pan-Methyl Histone H4K20 Quantification Kit (Fluorometric) is used for measuring pan-methylation of histone H4K20.

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 chromatindependent transcriptional repression or activation. HMTs transfer 1-3 methyl groups from S-adenosyl-L-methionine to the lysine and arginine residues of histone proteins. PR-SET7, SET9, SUV4.20h, and ASH1 are histone methyltransferases that catalyze methylation of histone H4 at lysine 20 (H4K20) in mammalian cells. H4K20 mono-methylation is involved in the maintenance of proper higher order structure of DNA and is consequently essential for chromosome condensation, as well as functioning in gene silencing. H4K20 dimethylation has been described as another repressive chromatin domains and is involved in the DNA damage response. H4K20 tri-methylation acts as a passive feature or structure determinant for chromatin degradation and release, as well as being an epigenetic marker of early apoptosis. Tri-methylation of H4K20 is also considered to be a common hallmark of human cancer. The H4K20 methylation can change by inhibition or activation of HMTs. Thus, quantitative detection of methyl histone H4K20 would provide useful information for better understanding epigenetic regulation of gene activation/ repression, and for developing HMT-targeted drugs. Pan-Methyl Histone H4K20 Quantification Kit (Colorimetric) provides a tool for measuring mono-, di-, and tri-methylation of histone H4K20.

Applications

The Pan-Methyl Histone H4K20 Quantification Kit (Fluorometric) is suitable for specifically measuring histone H4K20 tri-methylation using a variety of mammalian cells (human, mouse, etc.) including

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fresh and frozen tissues, cultured adherent and suspension cells.

Usage

For research use only (RUO)

Storage

Upon receipt, store F4 and standard control at –20°C. Store all other components at 4°C away from light. The components of the kit are 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 re-dissolved.

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.

Detection method Fluorometric

Compatible Sample Types

Histone Extract

Features & Benefits

Quick and efficient procedure, which can be finished within 2.5 hours.Innovative fluorometric assay without the need for radioactivity, electrophoresis, or chromatography.Simultaneously quantify mono-, di-, and tri-methylated H4K20 with the detection limit as low as 1 ng/well, and detection range from 10 ng-2 µg/well of histone extracts.The control is conveniently included for the quantification of pan-methylated H4K20.Strip microplate format makes the assay flexible: manual or high through-put.Simple, reliable, and consistent assay conditions.

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