

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

Cat. No. Kit-0822 **Lot. No.** (See product label)

SPECIFICATION

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.

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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 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 mL C2 (Antibody buffer) 12 mL C3 (Detection Antibody, 1 mg/mL)* 10 µL C4 (Color Developer) 10 mL C5 (Stop Solution) 6 mL Standard Control (100 µg/mL)* 20 µL 8-well sample strips (with frame) 9 strips 8-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.