



# Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric)

## Product Information

### Cat.No.

Kit-0597

### Product Overview

Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric) is use for measuring mono-methylation of histone H3-K79.

### 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. Dot1 is a histone methyltransferase that catalyzes methylation of histone H3 at lysine 79 (H3-K79) in mammalian cells. H3-K79 di-methylation is a widespread histone modification and is associated with transcriptionally active genes. Increased H3-K79 dimethylation is also found to be involved in some pathological processes such as leukemogenesis in human. The H3-K79 di-methylation can be also changed by inhibition or activation of HMTs. Thus quantitative detection of di-methyl histone H3-K79 would provide useful information for better understanding epigenetic regulation of gene activation and for developing HMT targeted drugs. The Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric) provides a tool for measuring di-methylation of histone H3-K79.

### Applications

For specifically measuring histone H3-K79 mono-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



## Mono-Methyl Histone H3-K79 Quantification Kit (Colorimetric)

Upon receipt, store C3 and Standard control at  $-20^{\circ}\text{C}$ . Store all other components at  $4^{\circ}\text{C}$  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  $37^{\circ}\text{C}$ ) 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  $\mu\text{l}$ ; C4 (color developer) 10 ml C5 (stop solution) 6 ml Standard control (100  $\mu\text{g}/\text{ml}$ )\* 20  $\mu\text{l}$ ; 8 well sample strips (with frame) 98 well standard control strips\* 3 User guide 1\* 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-K79 with the detection limit as low as 2 ng/well and detection range from 20 ng-5  $\mu\text{g}/\text{well}$  of histone extracts. The control is conveniently included for quantification of the amount of mono-methylated H3-K79. Strip microplate format makes the assay flexible: manual or high throughput. Simple, reliable, and consistent assay conditions.