



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

## Product Information

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### Cat.No.

Kit-0598

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### Product Overview

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

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### 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. Intergenic H3-K79 mono-methylation is a mark of enhancer regions and may provide unique binding surfaces along the chromatin fiber to stabilize interactions between enhancers and their target promoters. The H3-K79 mono-methylation can be changed by inhibition or activation of HMTs. Thus quantitative detection of mono-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 (Fluorometric) provides a tool for measuring mono-methylation of histone H3-K79.

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### 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.

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### Usage

For research use only (RUO)

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### Storage

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

Upon receipt, store F3, F4 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 F1 and F2 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

F1 (10X wash buffer) 20 ml F2 (antibody buffer) 12 ml F3 (detection antibody, 1 mg/ml)\* 10  $\mu\text{l}$  F4 (fluoro-developer)\* 24  $\mu\text{l}$  F5 (fluoro enhancer)\* 24  $\mu\text{l}$  F6 (fluoro-dilution) 8 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\* 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. Specifically capturing mono-methylated H3-K79 with the detection limit as low as 0.4 ng/well and detection range from 5 ng-2  $\mu\text{g}/\text{well}$  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.