



# Mono-Methyl Histone H4K20 Quantification Kit (Colorimetric)

## Product Information

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### Cat.No.

Kit-0601

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### Product Overview

Mono-Methyl Histone H4K20 Quantification Kit (Colorimetric) is used for measuring mono-methylation of histone H4K20.

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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 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 the proper higher order structure of DNA and is consequently essential for chromosome condensation, it also functions in gene silencing. The H4K20 mono-methylation can also be changed by inhibition or activation of HMTs, making quantitative detection of mono-methyl histone H4K20 useful in developing a better understanding of epigenetic regulation of gene activation/repression and for developing HMT-targeted drugs. The Mono-Methyl Histone H4K20 Quantification Kit (Colorimetric) provides a tool for measuring Mono-methylation of histone H4K20.

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### Applications

The Mono-Methyl Histone H4K20 Quantification Kit (Colorimetric) is suitable for specifically measuring histone H4K20 monomethylation 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)

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## Mono-Methyl Histone H4K20 Quantification Kit (Colorimetric)

### Storage

Upon receipt, store 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 re-dissolved.

### Kit Components

C1 (10X wash buffer) 10 ml C2 (antibody buffer) 6 ml C3 (detecting antibody, 1 mg/ml)\* 5  $\mu\text{l}$  C4 (color developer) 5 ml C5 C5 (stop solution) 3 ml Standard control (100  $\mu\text{g}/\text{ml}$ )\* 10  $\mu\text{l}$  Signal report solution\* 5  $\mu\text{l}$  Signal enhancer\* 120  $\mu\text{l}$  8 well sample strips (with frame) 48 well standard control strips 2\* For maximum recovery of the products, centrifuge the original vial prior to opening the cap.

**Detection method** Colorimetric

### Compatible Sample Types

Histone Extract

### Features & Benefits

Quick and efficient procedure, which can be finished within 2.5 hours. Innovative colorimetric assay with no need for radioactivity, electrophoresis, or chromatography. Specifically capture mono-methylated H4K20 with the detection limit as low as 5 ng/well and detection range from 20 ng-2  $\mu\text{g}/\text{well}$  of histone extracts. The control is conveniently included for quantification of monomethylated H4K20. Strip microplate format makes the assay flexible: manual or high throughput. Simple, reliable, and consistent assay conditions.