

## Product Information

### Anti-dimethyl-Histone H1.4 (diMe-Lys<sup>26</sup>) produced in rabbit, affinity isolated antibody

Catalog Number **H8289**

#### Product Description

Anti-dimethyl-Histone H1.4 (diMe-Lys<sup>26</sup>) is produced in rabbit using as immunogen a dimethylated synthetic peptide corresponding to amino acids 22-33 (diMe-Lys<sup>26</sup>) of human histone H1.4 (Gene ID: 3008), conjugated to KLH. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-dimethyl-Histone H1.4 (diMe-Lys<sup>26</sup>) specifically recognizes human histone H1.4 dimethylated at Lys<sup>26</sup> by immunoblotting (~35 kDa). Staining of the histone H1.4 (diMe-Lys<sup>26</sup>) band in immunoblotting is specifically inhibited by the immunizing peptide. No inhibition is observed with the unmodified non-methylated corresponding peptide.

This antibody is ChIP validated.

In eukaryotic cells, DNA is packaged into chromatin. The building block of chromatin is the nucleosome which is comprised of an octamer of core histones (H2A, H2B, H3, and H4) around which 147 bp of DNA are wrapped. Linker histone H1 binds to DNA between nucleosomal core particles and is involved in establishing and maintaining higher order chromatin structures. Histones are subjected to several covalent modifications, such as phosphorylation, methylation, acetylation and ubiquitination, that affect chromatin structure and regulate chromatin activity.<sup>1,2</sup> Histone modifications are thought to play an important role in cancer and disease.<sup>3</sup> In mammalian cells four histone H1 variants (H1.2 to H1.5) are present in all somatic cells, and a fifth (H1.1) is restricted to thymus, testis, and spleen and possibly lymphocytic and neuronal cells.<sup>4</sup> Histone H1 is also covalently modified. Histone H1 phosphorylation occurs at multiple sites, including the Ser<sup>27</sup> residue.<sup>5</sup> Histone H1.4 is di-methylated or acetylated at Lys<sup>26</sup>. Lys<sup>26</sup> is located within the flexible N-terminal domain of H1.4 just preceding the globular domain. H1.4 is methylated by Enhancer of Zeste 2 (Ezh2).<sup>6</sup> HP1 has been shown to bind specifically via

its chromo domain (CD) to methylated Lys<sup>26</sup> of histone H1, whereas simultaneous phosphorylation of neighboring Ser<sup>27</sup> prevents HP1 binding to H1.4.<sup>7</sup>

#### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

#### Product Profile

Immunoblotting: a working concentration of 0.5-1 µg/mL is recommended using an acid-extracted fraction of HL60 cells.

ChIP validated.

**Note**: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

#### References

1. Fischle, W., et al., *Curr. Opin. Cell Biol.*, **15**, 172-183 (2003).
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4. Khochbin, S., *Gene*, **271**, 1-12 (2001).
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6. Kuzmichev, A., et al., *Mol. Cell*, **14**, 183-193 (2004).
7. Daujat, S., et al., *J. Biol. Chem.*, **280**, 38090-38095 (2005).

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