

HISTONE PEPTIDES BACHEM

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We are pleased to present our newly available histone peptides for epigenetics research.

The chromosomes of eukaryotes consist of chromatin, a complex formed by the negatively charged DNA molecules and proteins rich in lysine and arginine called histones. Posttranslational modifications of these proteins influence the structure of chromatin, which is involved in the regulation of transcription of the associated DNA. If chromatin is in a loose conformation, the chromosomal DNA can be transcribed. Conversely, if chromatin is condensed (creating a complex called heterochromatin), it is inactive, and DNA transcription does not occur. Besides N^ε-methylation of arginine, N^ε-acetylation and methylation of lysine are the main modifications of histones determining their function. Lysine acetylation is characteristic for active chromatin, while deacetylation is generally associated with heterochromatin. On the other hand, histone methylation can be a marker for both active and inactive regions of chromatin. For example, methylation of a particular lysine (K9) on a specific histone (H3) that marks silent DNA is widely distributed throughout heterochromatin. This kind of epigenetic change is responsible for the inactivated X chromosome of females. In contrast, methylation of a different lysine (K4) on the same histone (H3) is a marker for active genes. For our complete range of peptides, amino acid derivatives, and biochemicals please visit shop.bachem.com

Histone Peptides

H1-7 H-1805

RRKASGP corresponds to the amino acid sequence in the vicinity of Ser³⁸ of calf thymus histone H1.

A.H.Pomerantz et al., Proc. Natl. Acad. Sci. USA, 74, 4261 (1977)

Histone H3 (1-20) H-7796

C.E.Berndsen et al., Biochemistry, 46, 2091 (2007)

Histone H3 (1-21)-Gly-Gly-Lys(biotinyl) amide H-7794

(Lys(Ac)¹²)-Histone H4 (1-21)-Gly-Gly-Lys(biotinyl) H-7778

(Lys(Me)₂)⁴-Histone H3 (1-21) H-8158

(Lys(Me)₂)⁴-Histone H3 (1-21)-Gly-Gly-Lys(biotinyl) H-7784

(Lys(Me)₂)⁹-Histone H3(1-21)-Gly-Gly-Lys(biotinyl) H-8162

(Lys(Me)₃)⁴-Histone H3 (1-21)-Gly-Gly-Lys(biotinyl) amide H-7788

(Lys(Me)₃)⁹-Histone H3 (1-21)-Gly-Gly-Lys(biotinyl) amide H-7792

(Lys(Ac)^{5,8,12,16})-Histone H4(1-25)-Gly-Ser-Gly-Ser-Lys(biotinyl) H-7776

Histone H3 (21-44) H-7798

The histone fragment was used as substrate for the protein arginine methyltransferase PRMT4.

X.Koh-Stenta et al., Biochem. J., 461, 323 (2014) /Siarheyeva et al., Structure, 20, 1425 (2012)

(Lys(Me)₂)²⁷-Histone H3 (21-44)-Gly-Lys(Biotinyl) H-8156

(Lys(Me)₃)²⁷-Histone H3 (21-44)-Gly-Lys(biotinyl) H-7786

Histone Deacetylase (HDAC) Substrates

Corresponding Deacetylated Substrates

Abz-Gly-Ala-Lys(Ac)-Ala-Ala-Dap(Dnp)-NH₂ M-2700

Ac-Arg-Gly-Lys(Ac)-AMC I-1925

Ac-Arg-Gly-Lys-AMC I-1990

Ac-Gly-Ala-Lys(Ac)-AMC I-1975

Ac-Gly-Ala-Lys-AMC I-1980

Boc-Lys(Ac)-AMC I-1875

Boc-Lys-AMC I-1880

Boc-Lys(Tfa)-AMC I-1985

Boc-Lys-AMC I-1880

Mca-Gly-Ala-Lys(Ac)-Arg-His-Arg-Lys-Val-NH₂ M-2690

Mca-Gly-Ala-Lys-Arg-His-Arg-Lys-Val-NH₂ M-2695



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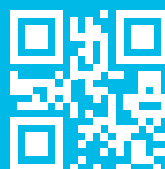
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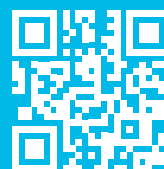
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