

## PHF8 Protein, Human (His)

<b>Cat. No.:</b>	HY-P701617
<b>Synonyms:</b>	PHF8; Histone lysine demethylase PHF8; PHD finger protein 8; [histone H3]-dimethyl-L-lysine(36) demethylase PHF8; [histone H3]-dimethyl-L-lysine(9) demethylase PHF8
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	Q9UPP1 (A38-N483)
<b>Gene ID:</b>	23133
<b>Molecular Weight:</b>	

### PROPERTIES

<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	Please use rapid thawing with running water to thaw the protein.
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	<p>PHF8 Protein, a histone lysine demethylase, assumes a pivotal role in cell cycle progression, rDNA transcription, and brain development. With selectivity for the di- and monomethyl states, PHF8 effectively demethylates histone H3 'Lys-9' residues in the mono- and dimethylated states (H3K9Me1 and H3K9Me2), dimethylated H3 'Lys-27' (H3K27Me2), and monomethylated histone H4 'Lys-20' residue (H4K20Me1). Its activity as a transcription activator is underscored by its role in removing epigenetic repressive marks, namely H3K9Me1, H3K9Me2, H3K27Me2, and H4K20Me1. Crucially involved in controlling the G1-S transition during cell cycle progression, PHF8 also acts as a coactivator for rDNA transcription, promoting polymerase I (pol I)-mediated transcription of rRNA genes. Furthermore, its significance extends to brain development, likely through the regulation of neuron-specific gene expression. PHF8's unique substrate specificity, including its activity toward H4K20Me1 only in the presence of nucleosomes, adds nuance to its role. The protein also exhibits a specific affinity for trimethylated 'Lys-4' of histone H3 (H3K4me3), influencing its demethylase specificity, particularly in synergy with transcription factor ARX and histone demethylase KDM5C. This intricate interplay highlights the multifaceted contributions of PHF8 to epigenetic regulation and cellular processes.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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