

PHF8 Protein, Human

Cat. No.:	HY-P701616
Synonyms:	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
Species:	Human
Source:	E. coli
Accession:	Q9UPP1 (A38-N483)
Gene ID:	23133
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	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.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	<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.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA