

## Product datasheet for RR201317

### Kdm8 (NM\_001037196) Rat Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Kdm8 (NM_001037196) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Kdm8
Synonyms:	Jmjd5; RGD1304823
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>RR201317 representing NM_001037196 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGTCAGAGGACACTACAGAGCCCCTAGTGGGGCCAGCACCCCTCTGGAAGGACCTCAGGGCGCTCCTGC  
CAGACACAGAGGAGGAGCTGAAGCTGGATCTCAGTGAGAAGGTGGACAGGAGCATGGCTACGCTGCTACG  
GCAGGCTTTGGGTCTGTTCTATGAAGGCCGTTGGCAGAAGTGCCTGCAGGCCAGTGAGGCTGTCTGGAC  
TACTCCTGGGAAAAGCTCAACACTGGTCCCTGGCGAGATGTAGACAAGGAATGGCGCCGGGTATATTCTT  
TCGGCTGCCTCCTGAAGACCCTGTGCCTGTGCCAGGCACCACAGAAGGCCACTGTGTGGCTGAAGCACT  
GCGGGTGTGTGACATGGGCTGTTGATGGGGGACGCCATCCTTGGGGACATTCTTCTCAAAGTTGCTACA  
GTCCTCCAGACACATCTGCTCCCTAGAAAAGCAGCCTGCCTGTGGCCCTCACCAAGGATCAGCCTGCTACCA  
AGAAGGCAAAGCATGATGCCAGCTCAACTCCTGATGTGGTATTAGATCGGGAAGTGGCCAGGCTTCGCTG  
CCCACCTCTGCAGCACTTCAAGAAGCATTTTCTAGTTCCTGGGAGACCTGTGATCTTGAAGGTGTGGCT  
GACCACTGGCCGTGCATGAAGAAGTGGAGTCTACAGTACATCCAGGAGATTGTGGCTGCCGCACTGTCC  
CCGTGGAAGTGGGTTCAAGATAACACAGATGAAGACTGGTCCCAGACTCTCATGACAGTCAATGAGTTCAT  
CCACAAATACATTCTGAGCGAGGCAAAGGATGTCGGGTACCTTGCTCAACACCAGCTGTTTCGACCAGATC  
CCAGAGTTGAAGCAGGACATCAGCATCCCCGATTACTGTTGCCTGGGCAATGGAGAAGAGGAAGAGATCA  
CTATCAATGCCTGGTTTGGTCTCAAGGAACCATCTCCCCATTGCATCAGGACCCCCAGCAGAATTCTT  
GGTCCAGGTGTTAGGAAGGAAGTACATCCGGCTGTATTCTCCGCAAGAGTCTGAGGCAGTGTACCCTCAT  
GAGACACACATTCTTATAACACCAGCCAGGTTGATGTGGAAAACCCCGACCTAGAGAAGTTCACCAAGT  
TCACCGAGGCCCGTTTCTGTCTGCATTCTGTCCCCAGGAGACACCCTTTTATACCTGCTAAGTACTG  
GCATTACGTGCGCTCCCTGGACCTGAGCTTCTCTGTGACGTTCTGGTGGTCA

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA





<b>ORF Size:</b>	1242 bp
<b>OTI Disclaimer:</b>	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_001037196.1</a> , <a href="#">NP_001032273.1</a>
<b>RefSeq Size:</b>	2460 bp
<b>RefSeq ORF:</b>	1245 bp
<b>Locus ID:</b>	308976
<b>UniProt ID:</b>	<a href="#">Q497B8</a>
<b>Cytogenetics:</b>	1q36
<b>MW:</b>	47.2 kDa

**Gene Summary:**

Bifunctional enzyme that acts both as an endopeptidase and 2-oxoglutarate-dependent monooxygenase. Endopeptidase that cleaves histones N-terminal tails at the carboxyl side of methylated arginine or lysine residues, to generate 'tailless nucleosomes', which may trigger transcription elongation. Preferentially recognizes and cleaves monomethylated and dimethylated arginine residues of histones H2, H3 and H4. After initial cleavage, continues to digest histones tails via its aminopeptidase activity. Upon DNA damage, cleaves the N-terminal tail of histone H3 at monomethylated lysine residues, preferably at monomethylated 'Lys-9' (H3K9me1). The histone variant H3F3A is the major target for cleavage. Additionally, acts as Fe(2+) and 2-oxoglutarate-dependent monooxygenase, catalyzing (R)-stereospecific hydroxylation at C-3 of 'Arg-137' of RPS6 and 'Arg-141' of RCCD1, but the biological significance of this activity remains to be established. Regulates mitosis through different mechanisms: Plays a role in transcriptional repression of satellite repeats, possibly by regulating H3K36 methylation levels in centromeric regions together with RCCD1. Possibly together with RCCD1, is involved in proper mitotic spindle organization and chromosome segregation. Negatively regulates cell cycle repressor CDKN1A/p21, which controls G1/S phase transition. Required for G2/M phase cell cycle progression. Regulates expression of CCNA1/cyclin-A1, leading to cancer cell proliferation. Also, plays a role in regulating alpha-tubulin acetylation and cytoskeletal microtubule stability involved in epithelial to mesenchymal transition (By similarity). Regulates the circadian gene expression in the liver (By similarity). Represses the transcriptional activator activity of the CLOCK-ARNTL/BMAL1 heterodimer in a catalytically-independent manner (By similarity). Negatively regulates the protein stability and function of CRY1; required for AMPK-FBXL3-induced CRY1 degradation (By similarity).[UniProtKB/Swiss-Prot Function]