

## Product datasheet for **RN209542**

### **Jmjd6 (NM\_001012143) Rat Untagged Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Jmjd6 (NM_001012143) Rat Untagged Clone
Tag:	Tag Free
Symbol:	Jmjd6
Synonyms:	Ptdsr
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>RN209542 representing NM_001012143 Red=Cloning site Blue=ORF Orange=Stop codon

TTTGTGAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGC**C

ATGAACCACAAGAGCAAGAAGCGCATCCGCGAGGCCAAGCGGAGTGCGCGGCCCGAGCTCAAGGACTCGC  
 TTGACTGGACGCGACACAATTACTATGAGAGCTACCCGCTGAGCCCTGCGGCCGTGCCGGATAACGTGGA  
 GAGAGCTGATGCTTTGCAGCTGTCGGTGAAAGAATTTGTAGAGCGGTATGAAAGACCTTACAAGCCCGTG  
 GTTCTGCTGAATGCACAAGAGGGCTGGTCCGCACAGGAGAAATGGACTCTGGAGCGTCTCAAAGGAAAT  
 ACCGGAACCAGAAGTTCAAATGCGGTGAGGATAATGACGGCTACTCGGTGAAGATGAAAATGAAATATTA  
 CATCGAGTACATGGAGAGCACCCGCGATGACAGTCCCCTTTACATCTTTGATAGCAGCTATGGTGAACAC  
 CCAAAAAGAAGGAACTTTTGAAGACTATAAGGTGCCCAAGTTTTTACAGATGATCTTTTCCAATATG  
 CGGGGGAGAAGCGCAGACCCCTTACAGGTGGTTTGTGATGGGGCCACCAGTTCTGGAAGTGGGATTCA  
 CATTGACCCTCTGGGACCAGTGCCTGGAATGCCTTAGTTGAGGGTCACAAGCGGTGGTGCCTGTTCCCA  
 ACAACACACCCCGAGAATCATCAAGGTGACCCGAGAAGAAGGAGGAAACCAACAGGATGAAGCAATTA  
 CCTGGTTTAATGTCATTTATCCCGGACACAGCTTCCAACCTGGCCACCCGAATTCAAACCCCTGGAGAT  
 ATTGCAGAAACAGGAGAACTGTCTTTGTACCAGGGGGCTGGTGGCACGTCGTCCTCAATCTTGACACC  
 ACCATTGCCATCACCCAGAATTTGCCAGCAGCACCAACTCCCTGTTGTGTGGCACAAGACGGTAAGAG  
 GCGGGCCAAAGTTATCCAGGAAGTGGTATAGGATCTTGAAGCAGGAGCACCTGAGCTGGCAGTGCCTTGC  
 CGACGCTGTTGACCTCCAAGAGTCCACAGGCATCGCCTCTGACAGCTCCAGTGACTCTTCTAGCTCCTCC  
 AGCTCCAGCTCGTCGACTCAGACTCGGAGTGTGAATCTGGGTGAGAAGGTGATGGGACAACACATCGCA  
 GGAAGAAGAGGAGAACTTGCAGCATGGTGGGAAATGGGGACACTACCTCACAGGATGACTGCGTGAGCAA  
 AGAGCGCAGTTCCTCCAGG**TGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA


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<b>Restriction Sites:</b>	Sgfl-Mlul
<b>ACCN:</b>	NM_001012143
<b>Insert Size:</b>	1212 bp
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
<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>	<u>NM_001012143.2, NP_001012143.2</u>
<b>RefSeq Size:</b>	1730 bp
<b>RefSeq ORF:</b>	1212 bp
<b>Locus ID:</b>	360665
<b>UniProt ID:</b>	<u>Q6AYK2</u>
<b>Cytogenetics:</b>	10q32.2

**Gene Summary:**

Dioxygenase that can both act as a arginine demethylase and a lysyl-hydroxylase. Acts as a lysyl-hydroxylase that catalyzes 5-hydroxylation on specific lysine residues of target proteins such as U2AF2/U2AF65 and LUC7L2. Regulates RNA splicing by mediating 5-hydroxylation of U2AF2/U2AF65, affecting the pre-mRNA splicing activity of U2AF2/U2AF65. Hydroxylates its own N-terminus, which is required for homooligomerization. In addition to peptidyl-lysine 5-dioxygenase activity, may act as an RNA hydroxylase, as suggested by its ability to bind single strand RNA. Also acts as an arginine demethylase which preferentially demethylates asymmetric dimethylation. Demethylates histone H3 at 'Arg-2' (H3R2me) and histone H4 at 'Arg-3' (H4R3me), including mono-, symmetric di- and asymmetric dimethylated forms, thereby playing a role in histone code. However, histone arginine demethylation may not constitute the primary activity in vivo. In collaboration with BRD4, interacts with the positive transcription elongation factor b (P-TEFb) complex in its active form to regulate polymerase II promoter-proximal pause release for transcriptional activation of a large cohort of genes. On distal enhancers, so called anti-pause enhancers, demethylates both histone H4R3me2 and the methyl cap of 7SKsnRNA leading to the dismissal of the 7SKsnRNA:HEXIM1 inhibitor complex. After removal of repressive marks, the complex BRD4:JMJD6 attract and retain the P-TEFb complex on chromatin, leading to its activation, promoter-proximal polymerase II pause release, and transcriptional activation. Demethylates other arginine methylated-proteins such as ESR1. Has no histone lysine demethylase activity (By similarity). Required for differentiation of multiple organs during embryogenesis. Acts as a key regulator of hematopoietic differentiation: required for angiogenic sprouting by regulating the pre-mRNA splicing activity of U2AF2/U2AF65 (By similarity). Seems to be necessary for the regulation of macrophage cytokine responses (By similarity).[UniProtKB/Swiss-Prot Function]