

## Product datasheet for **MG210741**

### **Kdm1a (NM\_133872) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Kdm1a (NM_133872) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Kdm1a
Synonyms:	1810043O07Rik; AA408884; Aof2; D4Ertd478e; Kdm1; Lsd1; mKIAA0601
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG210741 representing NM\_133872  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGCTACGGGGCGGCCGGCGAGCGCACTCCCGAAAGAAGGAGCCTCCGCGGGCTCGCCGCCGGGG  
 GCCTAGCCGAGCCGCGGGGTCTGCTGGGCCCCAGGCGGGGCCACAGCCGGGCCGGCTCCGCGACGCC  
 CATGGAGACCGGAATAGCCGAGACCCCGGAGGGCCGACGACCAGCCGGCGCAAGCGGGCAAGGTAGAA  
 TACAGAGAAATGGATGAAAGCTTGGCCAACCTCTCAGAAGATGAATATTATTCGGAAGAAGAAAGAAATG  
 CTAAGAGCAGAGAAGGAAAAGAAGCTTCCCCACCACCTCCTCAAGCCCCACCTGAGGAAGAAAATGAAAG  
 TGAGCCGGAAGAGCCGTCTGGTGTGGAGGGTGCAGCTTTTCAAAGCCGACTTCCCATGACCGAATGACC  
 TCTCAGGAAGCAGCCTGTTCCAGACATCATCAGTGGGCCTCAGCAGACACAGAAGGTTTTTCTGTTC  
 TCAGGAATCGCACATTGCAGTTATGGCTGGACAACCTCAAAGATCCAGCTGACGTTTGAAGCCACTCTCCA  
 GCAGCTGGAAGCGCCTTACAACAGCGATACTGTGCTTGTCCACCGAGTTCACAGTTACTTAGAGCGCCAT  
 GGTCTTATCAACTTCGGCATCTACAAGAGGATAAAACCCTTACCAATTAAGAAAGACAGGAAAGGTGATTA  
 TTATAGTTTCAGGTGTTTCTGGCTTGGCAGCAGCTCGACAGCTACAGAGTTTTGGATGGATGTCACACT  
 TCTGGAAGCCAGGGATCGAGTAGGTGGACGAGTTGCTACATTTGAAAAGGAAACTATGTAGCTGATCTT  
 GGCGCCATGGTTGTAACAGGTCTTGGAGGGAATCCCATGGCTGTGTCGTCAGCAAACAAGTAAATATGGAAC  
 TGGCCAAGATCAAGCAAAAATGCCCACTTTATGAAGCCAATGGACAAGCTGTTCCAAAAGAAAAGATGA  
 AATGGTAGAACAGAATTAACCGTTGCTAGAAGCCACTTCTTACCTTAGTCACCAGTTAGACTTCAAC  
 GTCCTCAATAATAACCTGTATCCCTTGGCCAGGCATTGGAGTTGTCTTACAGTGAAGAAAAGCATTG  
 TCAAAGATGAGCAGATTGAACATTGGAAGAAGATAGTGAAGAACTCAGGAGGAGTTGAAAGAGCTTTAA  
 TAAGATGGTAAATTTGAAGGAGAAAATTAAGAGCTCCATCAGCAATACAAAGAAGCTTCAGAAGTGAAG  
 CCGCCCAGAGATATCACAGCCGAGTTCCTGGTGAAGAGCAAGCACAGGGACCTGACTGCCCTCTGCAAGG  
 AATATGATGAATTAGCTGAAACACAAGGAAAGCTAGAAGAAAACCTTCAAGAATTGGAAGCCAATCCCC  
 AAGTGATGTATACCTCTCATCAAGAGACAGACAAATACTTACTGGCATTGTTGCAATCTTGAATTTGCC  
 AACGCCACACCTCTCTACCCTCTCTTAAACATTGGGATCAGGATGATGACTTTGAGTTTACTGGAA  
 GCCACCTGACAGTAAGGAATGGTACTCATGTGTGCCTGTGGCTTAGCTGAAGGCTTGGACATTAACCT  
 GAACACAGCAGTCCGGCAGTTCGCTACACAGCCTCAGGATGTGAAGTATTGCTGTGAACACACGTTCC  
 ACAAGTCAAACCTTTATTTATAAGTGTGATGCAGTTCTCTGTACACTTCTTTGGGAGTGTGAAGCAGC  
 AGCCACCAGCTGTTCAAGTTTGTGCCACCTTCTCCTGAGTGGAAAACATCTGCAGTCCAAAGGATGGGATT  
 TGGCAACCTTAACAAGGTGGTGTATGCTTTGACCGTGTGTTCTGGGACCAAGTGTCAATTTGTTGGG  
 CAGTTGGCAGTACAACCTGCTAGCAGGGGTGAGCTCTTCTCTTCTGGAACCTATATAAAGCTCCAATAC  
 TATTGGCCCTGGTAGCAGGAGAAGCTGTGGCATTATGGAGAACATTAGTGATGATGATTGTCGGCCG  
 GTGCTGGCCATTCTCAAAGGATTTTTGGCAGCAGTGCAGTCCCACAGCCCAAGGAACTGTGGTATCT  
 CGTTGGCGTGTGATCCGTGGGCCCGGGGCTCCTATTCTTATGTGGCTGCAGGATCCTCTGGAATGACT  
 ATGATTTAATGGCTCAGCCGATCACTCCTGGCCCTCAATCCAGGTGCCACAGCCAATCCCAAGACT  
 CTTCTTTGCTGGAGAACACACAATCCGGAACCTACCCAGCTACAGTCCATGGTGCTCTGTTGAGTGGGCTT  
 CGAGAAGCAGGAAGGATTGCCGACCAAGTTTTGGGAGCCATGTACACTTTCCTCGTCAGGCCACACCCAG  
 GTGTCCCTGCACAGCAGTCCCAAGTATG

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:** >MG210741 representing NM\_133872  
 Red=Cloning site Green=Tags(s)

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MATGAAGERTPRKKEPPRASPPGGLAEPGSGAGPQAGPTAGPGSATPMETGIAETPEGRRTSRRKRAKVE
YREMDESLANLSEDEYYSEEERNAKAEKEKLP PPPPQAPPEEENESEPEEPSGVEGAAFQSRLPHDRMT
SQEAACFPDIISGPQQTQKVFLFIRNRTLQLWLDNSKIQLTFEATLQQLEAPYNSDTVLVHRVHSYLERH
GLINFGIYKRIKPLPIKKTGKVIIGSGVSGLAAARQLQSFQMDVTLLEARDRVGGRVATFRKGNVYVDL
GAMVVTGLGGNPMVAVVSKQVNMELAKIKQKCPLYEANGQAVPKEKDEMVEQEFNRLLEATSYL SHQLDFN
VLNNKPVSLGQALEVVIQLQEKHVKDEQIEHWKIVKTQEELKELLNKMVNLKEKIKELHQQYKEASEVK
PPRDITAEFLVSKHRDLTALCKEYDELAETQGKLEEKLQELANPPSDVYLSSRDRQILDWHFANLEFA
NATPLSTLSLKHWDQDDDFEFTGSHLTVRNGYSCVPVALAEGLDIKLNTAVRQVRYTASGCEVI AVNTRS
TSQTFIYKDAVLCTPLGVLKQPPAVQFVPLPEWKTSAVQRMGFGNLNKVLCFDRVFWDPVNLFG
HVGSTTASRGELFLFWNLKAPILLALVAGEAAGIMENISDDVIVGRCLA ILKGFSSAVPQPKETVVS
RWRADPWARGSYSYVAAGSSGNDYDLMAQPIITPGPSIPGAPQPIPRLFFAGEHTIRNYPATVHGALLSGL
REAGRIADQFLGAMYTLP RQATPGVPAQQSPSM
  
```

TRTRPLE - GFP Tag - V

**Restriction Sites:** Sgfl-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shutting:

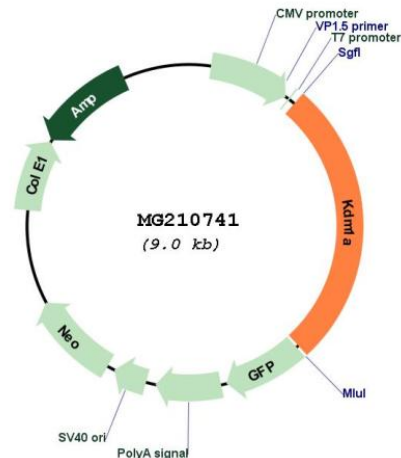


*EcoRI* *BamHI* *KpnI* *RBS* *Kozac Consensus* *SgfI* *AscI*  
 CTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGSAGATCTGCCGCCGATCGCCGGCGGCCAGATCT

*HindIII* *NheI* *RsrII* *MluI* *NotI* *XhoI* *GFP Tag*  
 CAAGCTTAACTAGCTAGCGGACCG ACG CGT ACG CGG CCG CTC GAG ATG GAG AGC GAC --- --  
 T R T R P L E M E S D - - -

*PmeI* *FseI*  
 --- GAA GAA AGA GTT TAA ACGGCCGGCCGCGGAGCT  
 - - E E R V Stop

## Plasmid Map:



ACCN: NM\_133872

ORF Size: 2409 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in *E. coli* are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** 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).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
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.

**RefSeq:** [NM\\_133872.1](#), [NP\\_598633.1](#)

RefSeq Size: 2999 bp

RefSeq ORF: 2562 bp

Locus ID: 99982

UniProt ID: [Q6ZQ88](#)

Cytogenetics: 4 68.8 cM

**Gene Summary:** Histone demethylase that can demethylate both 'Lys-4' (H3K4me) and 'Lys-9' (H3K9me) of histone H3, thereby acting as a coactivator or a corepressor, depending on the context. Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed. Acts as a corepressor by mediating demethylation of H3K4me, a specific tag for epigenetic transcriptional activation. Demethylates both mono- (H3K4me1) and di-methylated (H3K4me2) H3K4me. May play a role in the repression of neuronal genes. Alone, it is unable to demethylate H3K4me on nucleosomes and requires the presence of RCOR1/CoREST to achieve such activity. Also acts as a coactivator of androgen receptor (ANDR)-dependent transcription, by being recruited to ANDR target genes and mediating demethylation of H3K9me, a specific tag for epigenetic transcriptional repression. The presence of PRKCB in ANDR-containing complexes, which mediates phosphorylation of 'Thr-6' of histone H3 (H3T6ph), a specific tag that prevents demethylation H3K4me, prevents H3K4me demethylase activity of KDM1A. Demethylates di-methylated 'Lys-370' of p53/TP53 which prevents interaction of p53/TP53 with TP53BP1 and represses p53/TP53-mediated transcriptional activation (By similarity). Demethylates and stabilizes the DNA methylase DNMT1. Required for gastrulation during embryogenesis. Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development. Effector of SNAI1-mediated transcription repression of E-cadherin/CDH1, CDN7 and KRT8. Required for the maintenance of the silenced state of the SNAI1 target genes E-cadherin/CDH1 and CDN7.[UniProtKB/Swiss-Prot Function]