

Product datasheet for **MG222060**

Alkbh1 (NM_001102565) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Alkbh1 (NM_001102565) Mouse Tagged ORF Clone
Tag: TurboGFP
Symbol: Alkbh1
Synonyms: 2700073G19Rik; Abh; alkB; Alkbh; hABH
Mammalian Cell Selection: Neomycin
Vector: pCMV6-AC-GFP (PS100010)
E. coli Selection: Ampicillin (100 ug/mL)
ORF Nucleotide Sequence: >MG222060 representing NM_001102565
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGGGAAGATGGCGGCTGCTGTGGCTTCATTAGCCACGCTGGCTGCAGAGCCCAGAGAGGATGCTTTCC
GGAAGCTTTCCGCTTCTACCGGCAGAGCCGGCCGGGACAGCGGACCTGGGAGCCGTCATCGACTTCTC
AGAGGCGCACTTGGCTCGGAGCCGAAGCCCGGCTGCCAGGTGGTCAGGTTTCTCTGAATGTGTCC
TCTGTCACTGAGCGTGATGCCGAGAGGGTGGGACTTGAACCTGTGAGCAAGTGGAGGGCCTATGGACTCG
AAGGCTATCCTGGATTTATTTTCATTCCAAACCCTTCTCCCGGATGCCAGAGGCACTGGGTAACA
GTGCCTTAAGTTGACTCCAGAAACCTAATGTGTGTAACCTGGACAAGCACATGACTAAAGAAGAGACC
CAAGGACTGTGGGAACAGAGCAAAGAGGTCTAAGGTCTAAAGAAGTACTAAGCGAAGACCCCGAAGT
TACTAGAGAGACTGCGTTGGGTCAACCCTGGGCTACCATTATAACTGGGACAGTAAGAAATACTCAGCAGA
TCATTATACACCTTTCCCTTCTGACCTGGCTTTCCTCTCAGAGCAAGTCGCCACTGCCTGTGGATTTCA
GGTTTCCAAGCAGAAGCAGGGATCCTGAATTACTATCGCCTAGACTCCACTGGGAATCCACGTGGACA
GATCTGAGCTAGATCACTCCAAACCCTTGCTGTCTTCAGCTTTGGACAGTCTGCCATCTTCTCCTGGG
TGGCCTCAAGAGAGATGAAGCCCCACCGCCATGTTTATGCACAGTGGTACATCATGGTAATGTCCGGT
TTCAGCCGCTGTTAAATCATCGGTCCTCGAGTCCCTCCACATCCTGATGGGAGTGCCTGCCTCACT
GCCTGGAGACACCTCTCCAGCTGTCTCCCTAGCAACTCATTGGTTGAGCCCTGTCTGTGGAGGACTG
GCAGGTGTGTGCCACCTACCTGAGAAGTCTCGAGTTAATATGACTGTGCGTCAGGACTGGCCACAGGC
CAGGACTTTCCTTTAGAACCCTGGAAGAGACAAAAGAGACATTGCTGCAGATGGTTTGTGCCATCTGC
ATGACCCGAATAGCCAGTAAAACGAAAAGGTTAAATCCTAACAGC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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Protein Sequence: >MG222060 representing NM_001102565
 Red=Cloning site Green=Tags(s)

MGKMAAAVASLATLAAEPREDAFRKLFRRFYRQSRPGTADLGAVIDFSEHLARSPKPGVPQVVRFPPLNVS
 SVTERDAERVGLEPVSKWRAYGLEGYPGFIFIPNPFLPGCQRHWKQCLKLYSQPNVCNLDKHMTKEET
 QGLWEQSKVLRSEVTKRRRPRSLLELRWVTLGYHYNWDSKKYSADHYTPFPSDLAFLEQVATACGFQ
 GFQAEAGILNYYRLDSTLGIHVDRSELHDSKPLLSFSGQSAIFLLGGLKRDEAPTAMFMHSGDIMVMSG
 FSRLLNHAVPRVLPHPDGECLPHCLETPLPAVLPSNSLVEPCSVEDWQVCATYLRTARVNMVTRVQLATG
 QDFPLEPVEETKRDIAADGLCHLHDPNSPVKRRLNPNS

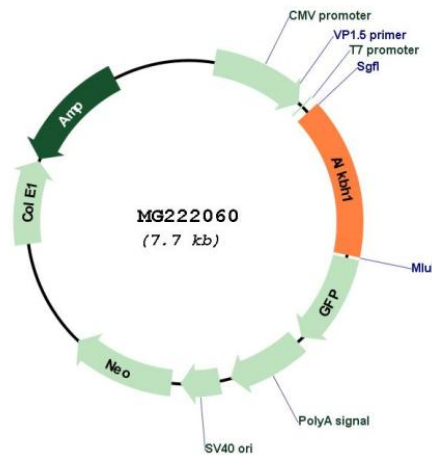
TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_001102565

ORF Size:	1167 bp
OTI Disclaimer:	<p>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 or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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</p>
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:	<ol style="list-style-type: none">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_001102565.1 , NP_001096035.1
RefSeq Size:	1968 bp
RefSeq ORF:	1170 bp
Locus ID:	211064
UniProt ID:	P0CB42
Cytogenetics:	12 D2

Gene Summary:

Dioxygenase that acts as on nucleic acids, such as DNA and tRNA (PubMed:27027282, PubMed:27745969). Requires molecular oxygen, alpha-ketoglutarate and iron (PubMed:27027282). A number of activities have been described for this dioxygenase, but recent results suggest that it mainly acts as on tRNAs and mediates their demethylation or oxidation depending on the context and subcellular compartment (By similarity). Mainly acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs, with a preference for N(1)-methyladenine at position 58 (m1A58) present on a stem loop structure of tRNAs (PubMed:27745969). Acts as a regulator of translation initiation and elongation in response to glucose deprivation: regulates both translation initiation, by mediating demethylation of tRNA(Met), and translation elongation, N(1)-methyladenine-containing tRNAs being preferentially recruited to polysomes to promote translation elongation (By similarity). In mitochondrion, specifically interacts with mt-tRNA(Met) and mediates oxidation of mt-tRNA(Met) methylated at cytosine(34) to form 5-formylcytosine (f(5)c) at this position (By similarity). mt-tRNA(Met) containing the f(5)c modification at the wobble position enables recognition of the AUA codon in addition to the AUG codon, expanding codon recognition in mitochondrial translation (By similarity). Specifically demethylates DNA methylated on the 6th position of adenine (N(6)-methyladenosine) DNA (PubMed:27027282). N(6)-methyladenosine (m6A) DNA is present at some L1 elements in embryonic stem cells and probably promotes their silencing (PubMed:27027282). Also able to repair alkylated single-stranded DNA and RNA containing 3-methylcytosine by oxidative demethylation, but with low activity (By similarity). Also has DNA lyase activity and introduces double-stranded breaks at abasic sites: cleaves both single-stranded DNA and double-stranded DNA at abasic sites, with the greatest activity towards double-stranded DNA with two abasic sites (By similarity). DNA lyase activity does not require alpha-ketoglutarate and iron and leads to the formation of an irreversible covalent protein-DNA adduct with the 5' DNA product (By similarity). DNA lyase activity is not required during base excision repair and class switch recombination of the immunoglobulin heavy chain during B lymphocyte activation (PubMed:23825659). May play a role in placental trophoblast lineage differentiation (PubMed:18163532).[UniProtKB/Swiss-Prot Function]