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Product datasheet for RC219938

ALAS1 (NM_000688) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	ALAS1 (NM_000688) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	ALAS1
Synonyms:	ALAS; ALAS-H; ALAS3; ALASH; MIG4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

ORF Nucleotide Sequence:

>RC219938 representing NM_000688
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGAGAGTGTTGTTCGCCGCTGCCCATTCTTATCCCGAGTCCCCCAGGCCTTTCTGCAGAAAGCAGGCA
AATCTCTGTTGTTCTATGCCCAAAACTGCCCCAAGATGATGGAAGTTGGGGCCAAGCCAGCCCCTCGGGC
ATTGTCCACTGCAGCAGTACACTACCAACAGATCAAAGAAACCCCTCCGGCCAGTGAGAAAGACAAAACT
GCTAAGGCCAAGGTCCAACAGACTCCTGATGGATCCCAGCAGAGTCCAGATGGCACACAGCTTCCGTCTG
GACACCCCTTGCCTGCCACAAGCCAGGGCACTGCAAGCAAATGCCCTTTCCTGGCAGCACAGATGAATCA
GAGAGGCAGCAGTGTCTTCTGCAAAGCCAGTCTTGAGCTTCAGGAGGATGTGCAGGAAATGAATGCCGTG
AGGAAAGAGGTTGCTGAAACCTCAGCAGGCCCCAGTGTGGTTAGTGTGAAAACCGATGGAGGGGATCCCA
GTGGACTGCTGAAGAACTTCCAGGACATCATGCAAAAGCAAAGACCAGAAAGAGTGTCTCATCTTCTTCA
AGATAACTTGCCAAAATCTGTTTCCACTTTTCAGTATGATCGTTTCTTTGAGAAAAAAATTGATGAGAAA
AAGAATGACCACACCTATCGAGTTTTTAAAACTGTGAACCGGCGAGCACACATCTTCCCCATGGCAGATG
ACTATTCAGACTCCCTCATCACCAAAAAGCAAGTGTCAGTCTGGTGCAGTAATGACTACCTAGGAATGAG
TCGCCACCCACGGGTGTGTGGGGCAGTTATGGACACTTTGAAACAACATGGTGCTGGGGCAGGTGGTACT
AGAAATATTTCTGGAACTAGTAAATTCCATGTGGACTTAGAGCGGGAGCTGGCAGACCTCCATGGGAAAG
ATGCCGCACTCTTGTTTTCCTCGTGCTTTGTGGCCAATGACTCAACCCTCTTCACCCTGGCTAAGATGAT
GCCAGGCTGTGAGATTTACTCTGATTCTGGGAACCATGCCTCCATGATCCAAGGGATTCGAAACAGCCGA
GTGCCAAAGTACATCTTCCGCCACAATGATGTCAGCCACCTCAGAGAACTGCTGCAAAGATCTGACCCCT
CAGTCCCCAAGATTGTGGCATTTGAAACTGTCCATTCAATGGATGGGGCGGTGTGCCCACTGGAAGAGCT
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TGCTAATGGATGCCGGCCTCCCTGTTGTCCACTGCCCCAGCCACATCATCCCTGTGCGGGTTGCAGATGC
TGCTAAAAACACAGAAGTCTGTGATGAACTAATGAGCAGACATAACATCTACGTGCAAGCAATCAATTAC
CCTACGGTGCCCCGGGGAGAAGAGCTCCTACGGATTGCCCCCACCCCTCACCACACACCCCAGATGATGA
ACTACTTCCTTGAGAATCTGCTAGTCACATGGAAGCAAGTGGGGCTGGAACTGAAGCCTCATTCCTCAGC
TGAGTGCAACTTCTGCAGGAGGCCACTGCATTTTGAAGTGATGAGTGAAAGAGAGAAGTCCTATTTCTCA
GGCTTGAGCAAGTTGGTATCTGCTCAGGCC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC219938 representing NM_000688
Red=Cloning site Green=Tags(s)

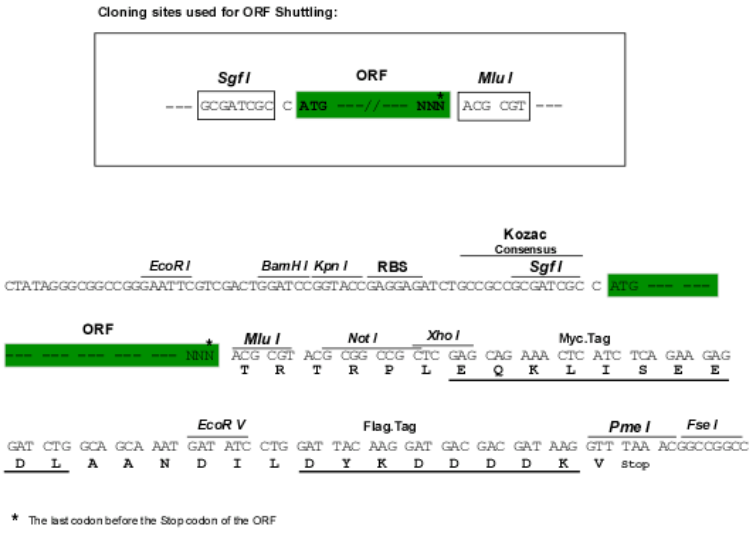
MESVVRRCPFLSRVPQAFLQKAGKSLLFYAQNCPKMMEVGAKPAPRALSTAAVHYQQIKETPPASEKDKT
AKAKVQQTPDGSQQSPDGTQLPSGHPLPATSQGTASKCPFLAAQMNQRGSSVFCKASLELQEDVQEMNAV
RKEVAETSAGPSVVSVKTDGGDPSGLLKNFQDIMQKQRPERVSHLLQDNLPKSVSTFQYDRFFEKKIDEK
KNDHTYRVFKTVNRRAHIFPMADDYSDSLITKKQVSVWCSNDYLGMSRHPRVCGAVMDTLKQHGAGAGGT
RNISGTSKFHVDLERELADLHGKDAALLFSSCFVANDSTLFTLAKMMPGCEIYSDSGNHASMIQGIRNSR
VPKYIFRHNDVSHLRELLQRSDPSVPKIVAFETVHSMDGAVCPLEELCDVAHEFGAITFVDEVHAVGLYG
ARGGGIGDRDGVMPKMDIISGTLGKAFGCVGGYIASTSSLIDTVRSYAAGFIFTTSLPPMLLAGALESVR
ILKSAEGRVLRRQHQRNVKLMRQMLMDAGLPVVHCPSHIIPVRVADAAKNTEVCDELMSRHNIYVQAINY
PTVPRGEELLRIAPTPHHTPQMMNYFLENLLVTWKQVGLELKPHSSAECNFCRRPLHFEVMSEREKSYFS
GLSKLVSAQA

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6037_d05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_000688

ORF Size: 1920 bp

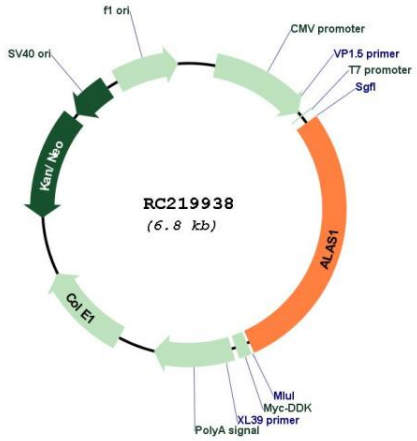
OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially 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.

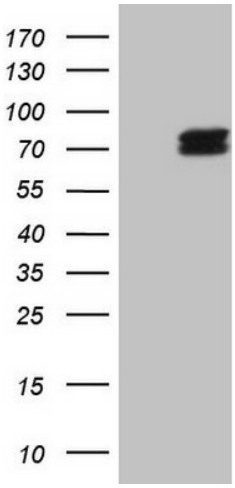
Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

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_000688.6
RefSeq Size:	2407 bp
RefSeq ORF:	1923 bp
Locus ID:	211
UniProt ID:	P13196
Cytogenetics:	3p21.2
Domains:	ALA_synthase, aminotran_1_2
Protein Pathways:	Glycine, serine and threonine metabolism, Metabolic pathways, Porphyrin and chlorophyll metabolism
MW:	70.4 kDa
Gene Summary:	This gene encodes the mitochondrial enzyme which is catalyzes the rate-limiting step in heme (iron-protoporphyrin) biosynthesis. The enzyme encoded by this gene is the housekeeping enzyme; a separate gene encodes a form of the enzyme that is specific for erythroid tissue. The level of the mature encoded protein is regulated by heme: high levels of heme down-regulate the mature enzyme in mitochondria while low heme levels up-regulate. A pseudogene of this gene is located on chromosome 12. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Jan 2015]

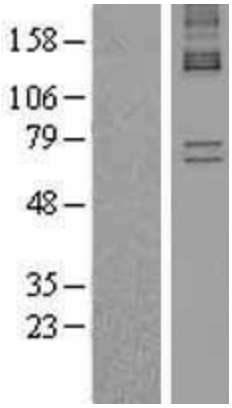
Product images:



Circular map for RC219938



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY ALAS1 (Cat# RC219938, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-ALAS1 (Cat# [TA808177])(1:2000). Positive lysates [LY400229] (100ug) and [LC400229] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400229]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC219938 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).