

Product datasheet for **MG204727**

Akr1a1 (NM_021473) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Akr1a1 (NM_021473) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Akr1a1
Synonyms:	2610201A18Rik; Akr1a4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG204727 representing NM_021473 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGACGGCCTCCAGTGTCTCCTGCACACTGGACAGAAGATGCCTCTGATTGGTCTGGGGACATGGAAGA
GTGAGCCTGGTCAGGTGAAAGCAGCCATTAACATGCCCTTAGCGCAGGCTACCGCCACATTGATTGTGC
TTCTGTATATGGCAATGAAACTGAGATTGGGGAGGCCCTGAAGGAGAGTGTGGGGTCAGGCAAGGCAGTC
CCTCGAGAGGAGCTGTTTGTGACATCCAAGCTGTGGAATACTAAGCACCACCCTGAGGATGTAGAACCTG
CCCTCCGGAAGACTGGCTGATCTGCAACTGGAGTATTTGGACCTCTATTTGATGCACTGGCCTTATGC
CTTTGAGCGGGGAGACAATCCCTTTCCCAAGAATGCCGATGGAAGTGTGAGATATGACTCAACTCACTAT
AAAGAGACCTGGAAGGCTCTGGAGTACTGGTGGCAAAGGGGCTGGTGAAGCCCTGGGCTGTCCAAC
TCAACAGTCGGCAGATTGATGATGTCCTCAGTGTGGCCTCTGTGCGCCAGCTGTCTTGCAGGTGGAATG
CCATCCATACCTGGCTCAGAATGAGCTCATTGCCACTGTACGCACGGGGCTTGGAGGTGACTGCTTAT
AGCCCCTTGGGTTCTCTGACCGTGTGGCGCCATCCTGATGAGCCAGTCTGCTTGAAGAACCAGTAG
TCTTGGCACTAGCTGAAAAACATGGCCGATCTCCAGCTCAGATCTTGCTTAGATGGCAGGTTTCAGCGGAA
AGTGATCTGCATCCCCAAAAGCATCAATCCTTCCCGCATCCTTCCAGAACATTGAGTATTTGATTTACCC
TTTAGCCAGAGGAGATGAAACAATTAGATGCTCTGAACAAAAATTGGCGGTATATTGTGCCCATGATTA
CGGTGGATGGGAAGAGGGTTCCAGAGATGCTGGACACCCTCTGTATCCCTTTAATGACCATAAC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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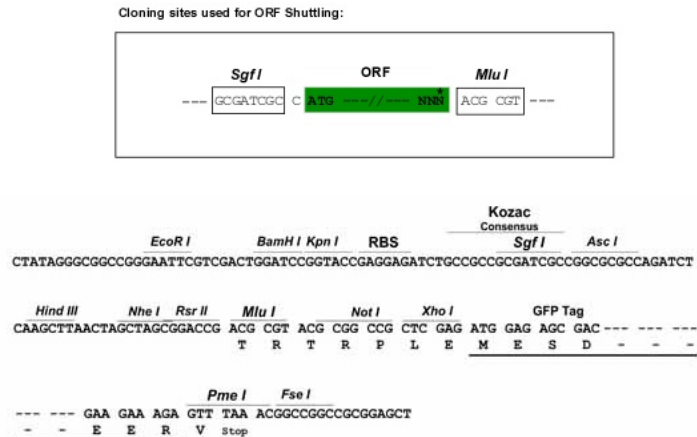
Protein Sequence: >MG204727 representing NM_021473
 Red=Cloning site Green=Tags(s)

MTASSVLLHTGQKMPILIGLGTWKSEPGQVKAAIKHALSAGYRHRIDCASVYGNETEIGEALKESVSGKAV
 PREELFVTSKLVNTKHHPEDEVLPALRKTLADLQLEYLDLMLHWPYAFERGDNPFKPADGTVRYDSTHY
 KETWKALEVLVAKGLVKALGLSNFNSRQIDDLVSVASVRPAVLQVECHPYLAQNELIAHCHARGLEVTAY
 SPLGSSDRAWRHPDEPVLLLEPVVLAALAEKHGRSPAQILLRWQVQRKVICIPKSIINPSRILQNIQVDFDT
 FSPEEMQLDALNKNWRYIVPMITVDGKRVPRDAGHPLYPFNDPY

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_021473

ORF Size: 975 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_021473.3](#), [NP_067448.1](#)

RefSeq Size: 1435 bp

RefSeq ORF: 978 bp

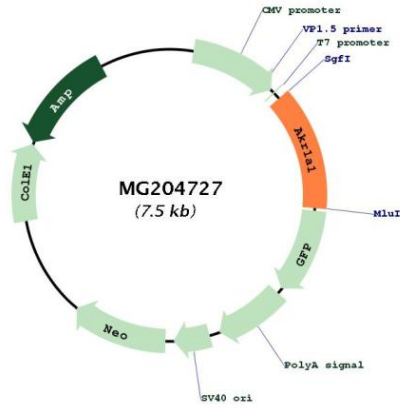
Locus ID: 58810

UniProt ID: [Q9JII6](#)

Cytogenetics: 4 D1

Gene Summary: Catalyzes the NADPH-dependent reduction of a wide variety of carbonyl-containing compounds to their corresponding alcohols. Displays enzymatic activity towards endogenous metabolites such as aromatic and aliphatic aldehydes, ketones, monosaccharides and bile acids, with a preference for negatively charged substrates, such as glucuronate and succinic semialdehyde (By similarity) (PubMed:22820017, PubMed:15769935, PubMed:20410296). Plays an important role in ascorbic acid biosynthesis by catalyzing the reduction of D-glucuronic acid and D-glucurono-gamma-lactone (PubMed:20410296, PubMed:15769935, PubMed:22820017). Functions as a detoxifying enzyme by reducing a range of toxic aldehydes. Reduces methylglyoxal and 3-deoxyglucosone, which are present at elevated levels under hyperglycemic conditions and are cytotoxic (By similarity). Involved in the detoxification of lipid-derived aldehydes like acrolein (By similarity). Plays a role in the activation of procarcinogens, such as polycyclic aromatic hydrocarbon trans-dihydrodiols, and in the metabolism of various xenobiotics and drugs (By similarity). Displays no reductase activity towards retinoids (By similarity).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG204727