

Product datasheet for **MC220993**

Foxk1 (NM_199068) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Foxk1 (NM_199068) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Foxk1
Synonyms:	A630048H08Rik; AI463295; ENSMUSG00000075577; Gm10868; Mnf
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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Fully Sequenced ORF: >MC220993 representing NM_199068
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGGCCGAAGTCGGCGAGGACAGCGGGCCCGCCCTGCTGGCGCTGCGCTCGGCTCCCTGCAGCCCCG
 TGCATGCGCCGGCTGCGGCCCGCCCTTCCGGCCACTACGTCCCCCGCCGCCGGCGCAACCTCC
 ACCCGGGCCGCCGCGCTGCCGCCGAGCCCGCCCGGGCCGGTGCCTCCACCGTCGCCACTGCCACC
 ACCACCGCGCCGCCCTGGTGGCCGCGCCGCTGCCTCCGTGCGCCAGAGCCCGGGCCTGCCCTGGCTC
 GCCTGGAGGGTCGGGAGTTCGAGTTCCTGATGCGACAGCCAGCGTCACCATCGGCCGCAACTCGTCGA
 GGGCTCGTGGACCTAAGCATGGCCTGTCGAGCTTCATTTCCCGGGCCACCTGCAGCTCAGCTTCCAG
 GAGCCTCACTTCTATCTTCGCTGTCTCGGAAGAACGGCGTCTTCGTGGACGGGGCTTCCAGAGGGCGG
 GAGCGCCCGCCCTGCAGTACCCCAACAATGCACCTTCCGGTTCGGAGCACGGCCATCAAGATCCAGTT
 CACATCGCTATACCATAAAGAGGAGGCCCCAGCATCGCCCTGCGGCCACTCTACCCACAGATCTCCCCA
 CTGAAGATCCACATTCCGGAGCCGGATCTCCGGAGCCTCGTCAGCCCCATCCCTTCCCCAACCGGCCA
 TCAGTGTCCCAACTCCTGTCCAGCAAGTCTCGAGGGGCTGGTTCATCCAGTTATCGCTTTGTCCAGAA
 TGTGACCTCCGACCTTACGTGGCCGAGAGTTTGTGCGAAGGCCCGCTCCGAGCAGCAAGCAGATGCG
 TCTGGCGGAGACAGCCCCAAGGACGAGTCGAAGCCACCGTACTCCTATGCGCAGCTGATCGTGCAGGCCA
 TCTCTCAGCCCAGGACAGGCAGCTAACCTAAGTGGCATCTACGCCACATCACCAAACATTACCTTA
 CTACAGGACTGCCGACAAGGGCTGGCAGAACTCTACCGACACAACCTCTCTTAAACCGTACTTCATC
 AAAGTCCCTCGGTCCCAGGAGGACCTGGGAAGGGCTCTTTTGGCGAATAGACCCTGCCAAGGCCA
 AGCTCGTGAACAAGCATTCCGAAAGCGGAGACAGAGAGGTGTCTCTGCTTCCGACACCCCTTCGGGCC
 TCTGTCTCACGGAGTGCTCCAGCTTCAACCACCCAGGGCTGATGTCCCTCGTTCAGTGGCCTG
 CAGACCCAGAGTGCTGTCTCGGGAGGGCTCCCCATTCCACATGATCCCGACTTGGGGTCAAAGTTAG
 CCTCTGTTCCAGAGTACCGCTATCCCAGAGTGCCCCAGGCTCCCTGTGAGCGCCAGCCGGTATCAT
 GGCTGTCCCTCCCGACCTTCCAACCTAGTGGCTAAGCCTGTGCGCTACATGCCAGCTTCCATAGTGACC
 TCACAGCAGCCCTCAGGCCACGCCATCCATGTGGTCCAGCAGGCCCTACCGTACCATGGTGAGGGTGG
 TTACCACCTCTGCCAACTCAGCCAACGGGTACATCCTGGCTAGCCAGGGCTCGACTGGGACCTCCCACGA
 CACAGCAGGCACAGCCGTGTTGGACCTGGCAATGAGGCTCGAGGTTTGAAGAGAAGCCCACCATAGCA
 TTTGCCACAATCCCGCAGCCAGCCGAGTTATCCAGACGGTCCGAGCCAGATGGCCCCAGGAGTCCCCG
 GACACACAGTACCATCCTACAGCCGGCTACACCAAGTACTATCGGGCAGCACCCTTCCGGTCCGGGC
 TGTCACTCAGAATGGAAGCACGCTGTACCCACGAATAGCTTGACTGGCAATGCTTATGCCCTCAGCAGC
 CCCCTGCAGCTCCTGGCAGCCCAGGCAAGTTCATCCACTCCAGTGGTTCATCACCCGGGTGTGTGAGGTGG
 GGCTGAGGAGCCAGCAGCAGCCGTCTCAGTAGCCGCTAATGCAGCGCAACCCAGCCGCTCCACTAC
 CACATCTGCCTCTTCTAGCGGAGAGCCGAGGTCAAGAGGTCCCGGGTAGAGGAACCCGGTGGGACAGCC
 ACCACACAGCCCACAGCTATGGCAGCCACCGCCCTCAGGGCCCGGGGACCGGCGAG**TGA**

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI
ACCN: NM_199068
Insert Size: 2160 bp

OTI Disclaimer: 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).

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:	<u>NM_199068.2</u> , <u>NP_951031.2</u>
RefSeq Size:	7462 bp
RefSeq ORF:	2160 bp
Locus ID:	17425
UniProt ID:	<u>P42128</u>
Cytogenetics:	5 81.53 cM

Gene Summary:

Transcriptional regulator involved in different processes such as glucose metabolism, aerobic glycolysis, muscle cell differentiation and autophagy (PubMed:25402684, PubMed:29861159, PubMed:30700909). Recognizes and binds the forkhead DNA sequence motif (5'-GTAAACA-3') and can both act as a transcription activator or repressor, depending on the context (PubMed:25402684, PubMed:29861159, PubMed:30700909). Together with FOXK2, acts as a key regulator of metabolic reprogramming towards aerobic glycolysis, a process in which glucose is converted to lactate in the presence of oxygen (PubMed:30700909). Acts by promoting expression of enzymes for glycolysis (such as hexokinase-2 (HK2), phosphofructokinase, pyruvate kinase (PKLR) and lactate dehydrogenase), while suppressing further oxidation of pyruvate in the mitochondria by up-regulating pyruvate dehydrogenase kinases PDK1 and PDK4 (PubMed:30700909). Probably plays a role in gluconeogenesis during overnight fasting, when lactate from white adipose tissue and muscle is the main substrate (PubMed:30700909). Involved in mTORC1-mediated metabolic reprogramming: in response to mTORC1 signaling, translocates into the nucleus and regulates the expression of genes associated with glycolysis and downstream anabolic pathways, such as HIF1A, thereby regulating glucose metabolism (PubMed:29861159). Together with FOXK2, acts as a negative regulator of autophagy in skeletal muscle: in response to starvation, enters the nucleus, binds the promoters of autophagy genes and represses their expression, preventing proteolysis of skeletal muscle proteins (PubMed:25402684). Acts as a transcriptional regulator of the myogenic progenitor cell population in skeletal muscle (PubMed:8007964, PubMed:9271401, PubMed:12446708, PubMed:22956541). Binds to the upstream enhancer region (CCAC box) of myoglobin (MB) gene, regulating the myogenic progenitor cell population (PubMed:8007964, PubMed:9271401). Promotes muscle progenitor cell proliferation by repressing the transcriptional activity of FOXO4, thereby inhibiting myogenic differentiation (PubMed:12446708, PubMed:22956541). Involved in remodeling processes of adult muscles that occur in response to physiological stimuli (PubMed:9271401, PubMed:22956541). Required to correct temporal orchestration of molecular and cellular events necessary for muscle repair (PubMed:10792059). Represses myogenic differentiation by inhibiting MEFC activity (PubMed:22956541). Positively regulates Wnt/beta-catenin signaling by translocating DVL into the nucleus (By similarity). Reduces virus replication, probably by binding the interferon stimulated response element (ISRE) to promote antiviral gene expression (By similarity).[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (1) represents the longer transcript and it encodes the longer protein (isoform alpha).