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Product datasheet for MG216773

Foxk2 (NM_001080932) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Foxk2 (NM_001080932) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Foxk2
Synonyms:	1110054H05Rik; 5730434B08Rik; 6230415M23Rik; ILF; Ilf1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)

View online »

ORF Nucleotide Sequence:

>MG216773 representing NM_001080932
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCGGCCGCGGCGGCGCTCTCGGGCGCGGGCGCCCCTCCCGCGGGCGGCGGGGCCGGGGGCGGCGGAT
CCCCGCCGGGCGGCTGGGCCGTGGCGCGGCTCGAAGGCCGCGAGTTCGAGTACCTCATGAAGAAGCGGTC
GGTGACCATCGGCCGCAACTCATCGCAGGGCTCGGTAGATGTGAGCATGGGCCACTCGAGCTTCATCTCG
CGGCGCCACCTGGAGATCTTCACGCCCCCGGGCGGCGGCCATAGCGCGGCCGCCCCGGAACCCGCGCAGC
CCCGGCCGGACGCGGGCGGCGACTTCTACCTGCGCTGTCTCGGCAAGAACGGCGTGTTCGTGGACGGGGT
GTTCCAGCGGCGGGGGGCGCCGCCGCTGCAGCTGCCGCGCGTGTGCACTTTCAGGTTTCCGAGCACAAAT
ATCAAGATAACATTCACAGCCCTATCCAGCGAGAAGAGAGAGAAGCAGGAAGCACCTGAGTCGCCAGTGA
AGCCTGTGCAGCCACACATCTCACCCCTGACCATCAACATTCCAGACACGATGGCCCACCTCATCAGCCC
CCTTCCTTCCCCCACGGGAACTATCAGTGCTGCCAACTCCTGCCCATCCAGTCCTCGCGGAGCAGGGTCT
TCAGGGTACAAAGTGGGCCGTGTGATGCCATCGGACCTCAGTTTAATGGCTGACAACTCCCAGCCAGAAA
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TGCCTCCGAGAGCAAGCTGGTAGAGCAGGCTTTTAGGAAAAGACGGCCTAGGGGCGTGCCTTGCTTTAGA
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TGGCGCCTCACAGCCCAAGCTTGCCGTCATCCAGGAGGCCAGGTTTGCCCAGAGTGCACCAGGGTCACCT
CTCTCTAGTCAGCCCGTCTTAATTACTGTCCAGCGGCAGCTACCCCCGGCCATTAAGCCTGTCACCTACA
CTGTTGCAACCCCAGTGACCACACCCACCTCTCAGCCACCTGTTGTGCAGACGGTCCATGTTGTTCATCA
GATACCAGCAGTGTCAGTCACCAGTGTGGCTGGACTGGCCCCAGCAAACACATACACAGTTGCTGGACAA
GCTGTGGTCACTCAGGCTGCGGTGCTGGCTCCTCCTAACCCTGAACCACAAGAGAATGGCGACCACAGAG
AAGTCAGAGTGAAAGTAGAACCTGTCCCTGCAATTAGCCCAGCTACACTAGGCGCTGCTAGCCGAATCAT
CCAGACATCACAGGGCACCCCTGTTCAGACAGTGACCATAGTGCAGCAGGCGCCTTTAGGTCAACACCAG
CTTCCAATAAAAACTGTAACGCAAAACGGAGCTCATGTGGTACCCATGCCTACAGCAGTGCACAGCCAGG
TGAACAATGCAGCAGCAAGTCCTCTCCATATGTTGGCCACCCATGCATCAGCATCGGCATCCCTGCCCAC
AAAGCGCCAGAACGGTGACCAGGCAGAGCAGCCAGAGCTCAAGCGAGTTAAAGCAGAAGATGGCGAGAGC
ATTGTCATTGCCCTGAGTGTGGATGCACCACCAGCAGCTGTGAGAGAAAAGGCAATCCAGAAC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG216773 representing NM_001080932
Red=Cloning site Green=Tags(s)

MAAAAALSGAGAPPAGGGAGGGGSPPGGWAVARLEGREFEYLMKKRSVTIGRNSSQGSVDVSMGHSSFIS
RRHLEIFTPPGGGHSAAAPEPAQPRPDAGGDFYLRCLGKNGVFVDGVFQRRGAPPLQLPRVCTFRFPSTN
IKITFTALSSEKREKQEAPESPVKPVQPHISPLTINIPDTMAHLISPLPSPTGTISAANSCPSSPRGAGS
SGYKVGRVMPSDLSLMADNSQPENEKEASGGDSPKDDSKPPYSYAQLIVQAITMAPDKQLTLNGIYTHIT
KNYPYYRTADKGWQNSIRHNLSLNRYFIKVPRSQEEPGKGSFWRIDPASESKLVEQAFRKRRPRGVPCFR
TPLGPLSSRSAPASPNHAGVLSAHSSGAQTPESLSREGSPAPLEPEPGASQPKLAVIQEARFAQSAPGSP
LSSQPVLITVQRQLPPAIKPVTYTVATPVTTPTSQPPVVQTVHVVHQIPAVSVTSVAGLAPANTYTVAGQ
AVVTQAAVLAPPNPEPQENGDHREVRVKVEPVPAISPATLGAASRIIQTSQGTPVQTVTIVQQAPLGQHQ
LPIKTVTQNGAHVVPMPTAVHSQVNNAAASPLHMLATHASASASLPTKRQNGDQAEQPELKRVKAEDGES
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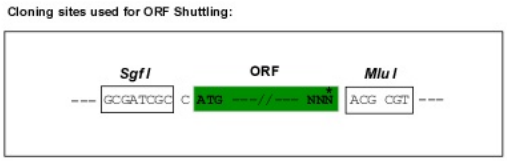
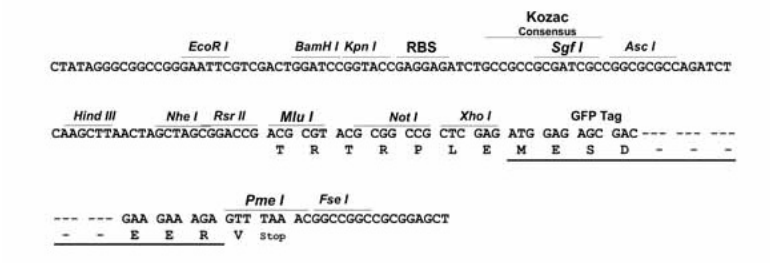
TRTRPLE - GFP Tag - V

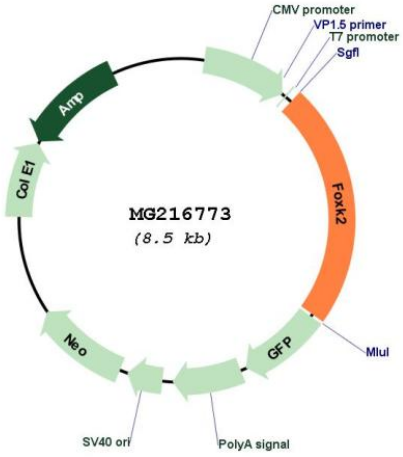
Restriction Sites: SgfI-MluI

Cloning Scheme:





Plasmid Map:



ACCN: NM_001080932

ORF Size: 1953 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_001080932.3
RefSeq Size:	5032 bp
RefSeq ORF:	1956 bp
Locus ID:	68837
UniProt ID:	Q3UCQ1
Cytogenetics:	11 E2

Gene Summary: Transcriptional regulator involved in different processes such as glucose metabolism, aerobic glycolysis 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 FOXK1, 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). Together with FOXK1, 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). In addition to the 5'-GTAAACA-3' DNA motif, also binds the 5'-TGANTCA-3' palindromic DNA motif, and co-associates with JUN/AP-1 to activate transcription (By similarity). Also able to bind to a minimal DNA heteroduplex containing a G/T-mismatch with 5'-TRT[G/T]NB-3' sequence (By similarity). Binds to NFAT-like motifs (purine-rich) in the IL2 promoter (By similarity). Positively regulates WNT/beta-catenin signaling by translocating DVL proteins into the nucleus (By similarity).[UniProtKB/Swiss-Prot Function]