

Product datasheet for **SC126658**

FOXK1 (AL137424) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	FOXK1 (AL137424) Human Untagged Clone
Tag:	Tag Free
Symbol:	FOXK1
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >NCBI ORF sequence for AL137424, the custom clone sequence may differ by one or more nucleotides

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AAACCTGACCCCGCCCATCTCTCTGGCCCCACCCCTCGCTCCTCTCTGCTCCCGCCTCCTAACTTCTG
TCCCCGCCCCCTCGTTCTCCCTGGTCCAGCTCCCTCGTTCTCTCTGGTCCCGCCTCCTCACTTCTTT
CCTAGCCTGGGCCCTCACTTCTTCTGGTCCCGCCTCCTCACTTCTTTCTAGCATCGGCCCTCACTTCT
TCCTGGTCCCGCCCCCTGCTTCTCTCTTTTTTCTCCTCCGCGTTTTTACCCCTCCCTCCTTCTCC
TCGCTTCCCATCCTCTCCGCCACCTGCCCCCTCGCTTTTCCCTCCTGGCCTTGCCCTGTGCCCTGGT
CCCATCCCTCACTTCTCACCACCTTCCCATCATCTCTCTTGCTTTCCTGTTTTCCCTCCCACCTGCTCC
TCCCTCATCTCCTGGTCTTTCCACCACCTTCCAAGCTATTTTGTACCTCCCTTCCACTTGCCCCCT
TGCTTCTCCCCTCCTGCCCCACCACCCTTCTCACTCCCCATCCTTTTGTTCCTCACCCTCACCCT
CCCACACCGTCTCCTCCCTTCTCCCTAGCCCCGCCCTCACTTCAAGCCCCGCCCTATTCTGCTCC
TAGCCCCGCCCTCGCTGCTGTCTGGCGGGCTCCACCCTTCTTTCCTTCAAGCTGAAATTCCTCAA
TCCTATCTGTAGCTGCTCCAGTCTGCTCTCTTCACTTCCCCCTGGTCCAGCCCTCTTCACTCAGT
CTGGGCCACTTCCCTGCTCTTAGGCCAGACCGCTAGCTACTTTTAACTCTGCTTCTCAATTTTACCTT
TTCTGCATTTTGTTCACCATCACCCCCACACTCAGCAACCCAGAGCGCGTGAGGCTCTGATCCCTACT
CCCACACTCACTGGAGGCTTTGGAAGCTGCCACACGCAGGCTCCTTGATTCAATTTGTCTTCAATGAAA
AGTCCGTGTTTCTGGTGGCTCTGTAGTCCACCTTCAAGGGTGAGCGCAACGCTCTGCCGCGGGCCTG
CGACTTGGTGGCGGGATGTGATGCCAACCTGTTTCCCCCGGGCTCCAGAGGTTCTGGACCAGGCTGCA
TCCTCGTCTTCCCTTCTCACTCATTGGTACTACTCTTTCCAGTTTCAATTCATCCCTAAAGCAGG
ATGGCCGTGTTGCAAATGCGGCTGCTCCGGGACTTTCCAACTCGAATATTTCCAGCTCAGGAGGAA
TGAGAACTCCAAAGTCTGGTGGTTCAGTCTTTCAAAGAGAGAATGAGCGTTTTGAACACTTTATGG
CAGATGCCAGCCATAAAGTCATCGGTAATCCATGCAAACAATAGGAATTTTTTAACTAAAATTT
ACTTTGAGAGCCCATAGTTGTTGCATGGCCCACTTTTGTCTTAAGAGAAGGTTTTGTTTTTGTATAA
AGATATCAAATAATGATTTGGACCCAAACCCAGACCTGGTTTTGTAACGTAGGAGGTAGTTTCTCTGG
GATCTTTGCTTCTGGGAAATACATTTCTTATGCCAGGGCTGATAGGAAACGTTCTCACTTTGTAGAT
ACAATGTAGATACATTTTATTTATGTGGTAAGATAAAAAGTAACATTTTGTAGATTGTAATACTTGTA
GCTTTTAACTTGGTTCTGATTTACAGCTCAGTCTGTAATTGACATCAGATTGGTTTCAGTTATCTTGTA
AAAGCGAAAGCAACTGATTTTGTGTTAGAAATATGATGAATGTTTAGAAGGAATAGGTTTTAATTGAAA
TGTTTATGTCTGGTGTATGTATATTAATCAATCCTATTTGCCAAGCCTGAGCCTTGAAAGGGAGGACTTG
GTTTCTCCTCCTACCAAATATTTTTGGATTTAGGAATTTAGATTATCGAAGCAAGAATGCTTTGAGGAA
TTTTTGGATGACATTTGATAGGGAAGGATCAGGTGATGAGTGTGTTTTCTGAAACACCTTTTCCCTTTCC
CTTTCCCTTTCAGTAGATGTTATGAATGGTTTGGAGGATTTGTGAGTGTGATCATCCTTACAATAGGAT
TGCGGTTTAGCGGTAATGGTACACATGCAATGCCAGTACGTGGAACCTTAGTTTACCTCGAAAGGTTTGA
ACTAGAAGTTTGTGACGGTGAATAGGTTTTAGTCTCATCTTTCTGGTTAAGGGAAGTTTGAATTTCA
CTTCTGGGATGTTGAGAAGCAATCTTTCAAATTTGAATACTTTTGTACAGGTTTCAAGTTTATTTCC
ATGTTTGTATTTTGAAAAAAGACTGTTAAAAATGAGGGATATTTCAACCAGTCAATGAATAG
ACACAGAGCGAAATTCAGTGCAAAGATAGTGAAGATGGCCTGGCGCCGTGGCTCACGCTGAATCCCAGC
ACTTTGGGAGGCTGAGGCAGATCACGAGGTCAGGAGGTTGAGACCATCCTGGCTAACACGGTGAAACCC
GTCTCTACTAGAAATACAAAAATTAGCTGGGCGCGTGGCTCACACCTGTAATCTCAGCACTTTGGGAG
GCTGAGGTGGGCGGATCACGAGGTCAGGAGATTGAGACCATCCTGACTAACACAGTGAAACCTCGTCTC
TAGTAGAAATACAAAAATTAGCTGGGTGTTGGCGGGCCTGTAGTCCAGCTACTGGGTAGGCTGA
GGCAGGAGAATGGCTTGAACCTGGGAGGTGGAGCTTGCAGTGAACCGAGATTGTGCCACTGCACTTCAGC
CTGGGCAACAGAGTGAGACTCTGTCTTAAAAAAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG
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5' Read Nucleotide Sequence:	>OriGene 5' read for AL137424 unedited ATTTGTAATACGACTCACTATAGGGCGGCACGCGAATTCGCACGAGGCTCTGATCCCTAC TCCACACTCACTGGAGGCTTTGGAAAGCTGCCACACGAGGCTCCTTGATTCATTTTGT CTTCAATGAAAAGTCCGTGTTTCTGGGTGGCTCTGTAGTGCCACCTTCAAGGGTGAGCG CAACGCTCTGCCGCGGCCTGCGACTTGGTGGCGGGATGTGATGCCAACCTGTTTCCCC CCGGGCTCCAGAGGTTCTGGACCAGGCTGCATCCTCGTCTTCCCTTCTCACTCTCATTG GTACTACTCTCTTCCAGTTTCAATTCATCCCTAAAGCAGGATGGCCGTGTTGCAAATGC GGCTCTGCTCCGGGACTTCCAAACTCGAATATTTCCAGCTCTGGAAGGAACTAAAAAG TTCATTCTAATCCCGTCAGGGATTTTCCCTGGATTTTCTGTTCAAGTGGCTCAGTCGG GTGAGAACTCCAAAGTCTGGTTTGGTCAGGTCCTTTCAAAGAGAGAATGAGCGTTTGA ACACCTTTATGGCAGATGCGCAGCCATAAAGTCATCGGTAAATCCATGCAAACAATAGGT AATTTTTTTAAACTAAAATTTACTTTGAGAGCCCATAGTTGTTGCATGGCCCACTTTTG TCTTAAGAGAANGTTTTGTTTTTTGTATAAAGATATCAAATAATGATTTGGACCCAAAC CCANACCCTGGTTTTGTAAAGTAAGAAGGTAGTTCCTCTGAGATCTTTGCTTCTGGGAAA TACATTTCTTTATGCCAGGGCTGATAAGAAACGCTTCTCACTCTGGAGATACAATGTAGA TACATTTTTATTATGTGGTACAATAAAGTAACATTTTGGAGAATGCAAACCTG
Restriction Sites:	NotI-NotI
ACCN:	AL137424
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>AL137424.1</u>
RefSeq Size:	2916 bp
RefSeq ORF:	2916 bp
Locus ID:	221937
Cytogenetics:	7p22.1

Gene Summary:

Transcriptional regulator involved in different processes such as glucose metabolism, aerobic glycolysis, muscle cell differentiation and autophagy (By similarity). 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:17670796). 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 (By similarity). 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 (By similarity). Probably plays a role in gluconeogenesis during overnight fasting, when lactate from white adipose tissue and muscle is the main substrate (By similarity). 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 (By similarity). 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 (By similarity). Acts as a transcriptional regulator of the myogenic progenitor cell population in skeletal muscle (By similarity). Binds to the upstream enhancer region (CCAC box) of myoglobin (MB) gene, regulating the myogenic progenitor cell population (By similarity). Promotes muscle progenitor cell proliferation by repressing the transcriptional activity of FOXO4, thereby inhibiting myogenic differentiation (By similarity). Involved in remodeling processes of adult muscles that occur in response to physiological stimuli (By similarity). Required to correct temporal orchestration of molecular and cellular events necessary for muscle repair (By similarity). Represses myogenic differentiation by inhibiting MEFC activity (By similarity). Positively regulates Wnt/beta-catenin signaling by translocating DVL into the nucleus (PubMed:25805136). Reduces virus replication, probably by binding the interferon stimulated response element (ISRE) to promote antiviral gene expression (PubMed:25852164). [UniProtKB/Swiss-Prot Function]