

FOXK1 Antibody (C-term) Blocking Peptide
Synthetic peptide
Catalog # BP9880b**Specification**

FOXK1 Antibody (C-term) Blocking Peptide - Product InformationPrimary Accession [P85037](#)**FOXK1 Antibody (C-term) Blocking Peptide - Additional Information**

Gene ID 221937

Other Names

Forkhead box protein K1, Myocyte nuclear factor, MNF, FOXK1 {ECO:0000303|PubMed:15202027, ECO:0000303|PubMed:15289879}

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

FOXK1 Antibody (C-term) Blocking Peptide - Protein Information

Name FOXK1

Function

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 for 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).

Cellular Location

Nucleus. Cytoplasm. Note=Translocation to the nucleus is regulated by phosphorylation: phosphorylation by GSK3 (GSK3A or GSK3B) promotes interaction with 14-3-3 proteins and sequestration in the cytoplasm. Dephosphorylation promotes translocation to the nucleus (By similarity). Accumulates in the nucleus upon viral infection (PubMed:25852164). {ECO:0000250|UniProtKB:P42128, ECO:0000269|PubMed:25852164}

Tissue Location

Expressed both developing and adult tissues (PubMed:15289879). In adults, significant expression is seen in tumors of the brain, colon and lymph node (PubMed:15289879)

FOXK1 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

FOXK1 Antibody (C-term) Blocking Peptide - Images

FOXK1 Antibody (C-term) Blocking Peptide - Background

FOXK1 is a transcriptional activator that binds to the upstream enhancer region (CCAC box) of myoglobin gene. It plays a role in myogenic differentiation and in remodeling processes of adult muscles that occur in response to physiological stimuli.

FOXK1 Antibody (C-term) Blocking Peptide - References

Olsen, J.V., et al. Cell 127(3):635-648(2006)Tsai, K.L., et al. J. Biol. Chem. 281(25):17400-17409(2006)Huang, J.T., et al. Int. J. Oncol. 25(3):751-757(2004)Katoh, M., et al. Int. J. Mol. Med. 14(1):127-132(2004)