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Anti-FOXO1A Picoband Antibody

Catalog # ABO11886

Specification

Anti-FOXO1A Picoband Antibody - Product Information

Application	**WB**
Primary Accession	Q12778
Host	**Rabbit**
Reactivity	**Human, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Forkhead box protein O1(FOXO1) detection. Tested with WB in Human;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-FOXO1A Picoband Antibody - Additional Information

Gene ID 2308

Other Names
Forkhead box protein O1, Forkhead box protein O1A, Forkhead in rhabdomyosarcoma, FOXO1, FKHR, FOXO1A

Calculated MW
69662 MW KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Rat, Human

Subcellular Localization
Cytoplasm . Nucleus . Shuttles between the cytoplasm and nucleus. Largely nuclear in unstimulated cells. In osteoblasts, colocalizes with ATF4 and RUNX2 in the nucleus (By similarity). Insulin-induced phosphorylation at Ser-256 by PKB/AKT1 leads, via stimulation of Thr-24 phosphorylation, to binding of 14-3-3 proteins and nuclear export to the cytoplasm where it is degraded by the ubiquitin-proteosomal pathway. Phosphorylation at Ser-249 by CDK1 disrupts binding of 14-3-3 proteins and promotes nuclear accumulation. Phosphorylation by NLK results in nuclear export. Translocates to the nucleus upon oxidative stress-induced phosphorylation at Ser-212 by STK4/MST1. SGK1-mediated phosphorylation also results in nuclear translocation. Retained in the nucleus under stress stimuli including oxidative stress, nutrient deprivation or nitric oxide. Retained in the nucleus on methylation. .

Tissue Specificity
Ubiquitous. .

Protein Name
Forkhead box protein O1

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
E.coli-derived human FOXO1A recombinant protein (Position: N456-G655). Human FOXO1A shares 93% amino acid (aa) sequence identity with both mouse and rat FOXO1A.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage **At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.**

Sequence Similarities
Contains 1 fork-head DNA-binding domain.

Anti-FOXO1A Picoband Antibody - Protein Information

Name FOXO1 {ECO:0000303|PubMed:12228231, ECO:0000312|HGNC:HGNC:3819}

Function
Transcription factor that is the main target of insulin signaling and regulates metabolic homeostasis in response to oxidative stress (PubMed:10358076, PubMed:12228231, PubMed:15220471, PubMed:15890677, PubMed:18356527, PubMed:19221179, PubMed:20543840, PubMed:21245099). Binds to the insulin response element (IRE) with consensus sequence 5'-TT[G/A]TTTTG-3' and the related Daf-16 family binding element (DBE) with consensus sequence 5'-TT[G/A]TTTAC-3' (PubMed:10358076). Activity suppressed by insulin (PubMed:10358076). Main regulator of redox balance and osteoblast numbers and controls bone mass (By similarity). Orchestrates the endocrine function of the skeleton in regulating glucose metabolism (By similarity). Also acts as a key regulator of chondrogenic commitment of skeletal progenitor cells in response to lipid availability: when lipids levels are low, translocates to the nucleus and promotes expression of SOX9, which induces chondrogenic commitment and suppresses fatty acid oxidation (By similarity). Acts synergistically with ATF4 to suppress osteocalcin/BGLAP activity, increasing glucose levels and triggering glucose intolerance and insulin insensitivity (By similarity). Also suppresses the transcriptional activity of RUNX2, an upstream activator of osteocalcin/BGLAP (By similarity). Acts as an inhibitor of glucose sensing in pancreatic beta cells by acting as a transcription repressor and suppressing expression of PDX1 (By similarity). In hepatocytes, promotes gluconeogenesis by acting together with PPARGC1A and CEBPA to activate the expression of genes such as IGFBP1, G6PC1 and PCK1 (By similarity). Also promotes gluconeogenesis by directly promoting expression of PPARGC1A and G6PC1 (PubMed:17024043). Important regulator of cell death acting downstream of CDK1, PKB/AKT1 and STK4/MST1 (PubMed:<a

href="http://www.uniprot.org/citations/18356527" target="_blank">18356527, PubMed:19221179). Promotes neural cell death (PubMed:18356527). Mediates insulin action on adipose tissue (By similarity). Regulates the expression of adipogenic genes such as PPARG during preadipocyte differentiation and, adipocyte size and adipose tissue-specific gene expression in response to excessive calorie intake (By similarity). Regulates the transcriptional activity of GADD45A and repair of nitric oxide-damaged DNA in beta-cells (By similarity). Required for the autophagic cell death induction in response to starvation or oxidative stress in a transcription-independent manner (PubMed:20543840). Mediates the function of MLIP in cardiomyocytes hypertrophy and cardiac remodeling (By similarity). Positive regulator of apoptosis in cardiac smooth muscle cells as a result of its transcriptional activation of pro-apoptotic genes (PubMed:19483080). Regulates endothelial cell (EC) viability and apoptosis in a PPIA/CYPA- dependent manner via transcription of CCL2 and BCL2L11 which are involved in EC chemotaxis and apoptosis (PubMed:31063815).

Cellular Location
Cytoplasm. Nucleus. Note=Shuttles between the cytoplasm and nucleus. Largely nuclear in unstimulated cells (PubMed:11311120, PubMed:12228231, PubMed:19221179, PubMed:20543840, PubMed:21245099, PubMed:25009184). In osteoblasts, colocalizes with ATF4 and RUNX2 in the nucleus (By similarity). Serum deprivation increases localization to the nucleus, leading to activate expression of SOX9 and subsequent chondrogenesis (By similarity). Insulin-induced phosphorylation at Ser- 256 by PKB/AKT1 leads, via stimulation of Thr-24 phosphorylation, to binding of 14-3-3 proteins and nuclear export to the cytoplasm where it is degraded by the ubiquitin-proteasomal pathway (PubMed:11237865, PubMed:12228231). Phosphorylation at Ser-249 by CDK1 disrupts binding of 14-3-3 proteins and promotes nuclear accumulation (PubMed:18356527) Phosphorylation by NLK results in nuclear export (By similarity) Translocates to the nucleus upon oxidative stress-induced phosphorylation at Ser-212 by STK4/MST1 (PubMed:19221179, PubMed:21245099). SGK1-mediated phosphorylation also results in nuclear translocation (By similarity). Retained in the nucleus under stress stimuli including oxidative stress, nutrient deprivation or nitric oxide (By similarity). Retained in the nucleus on methylation (By similarity). PPIA/CYPA stimulates its nuclear accumulation (PubMed:31063815). Deacetylation by SIRT6, promotes its translocation into the cytoplasm (PubMed:25009184). {ECO:0000250|UniProtKB:Q9R1E0, ECO:0000269|PubMed:11237865, ECO:0000269|PubMed:11311120, ECO:0000269|PubMed:12228231, ECO:0000269|PubMed:18356527, ECO:0000269|PubMed:19221179, ECO:0000269|PubMed:20543840, ECO:0000269|PubMed:21245099, ECO:0000269|PubMed:25009184, ECO:0000269|PubMed:31063815}

Tissue Location
Expressed in umbilical endothelial cells (at protein level) (PubMed:19483080). Abundantly expressed in skeletal muscle and ovary, with lower expression in the heart, placenta, lung, liver, pancreas, spleen, testis and small intestine (PubMed:9479491) Weakly expressed in the brain, thymus, prostate and mucosal lining of the colon (PubMed:9479491).

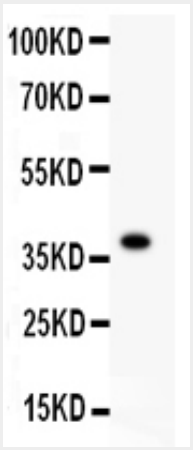
Anti-FOXO1A Picoband Antibody - Protocols

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

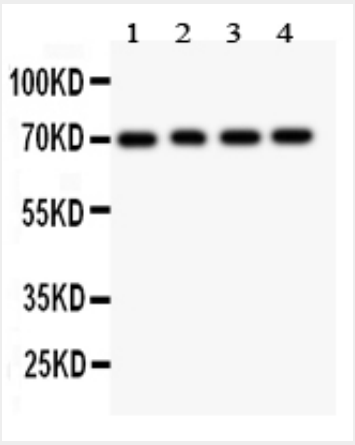
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-FOXO1A Picoband Antibody - Images



Anti- FOXO1A antibody, ABO11886, Western blottingAll lanes: Anti FOXO1A(ABO11886) at 0.5ug/mlWB: Recombinant Human FOXO1A Protein 0.5ngPredicted bind size: 39KDObserved bind size: 39KD



Anti- FOXO1A antibody, ABO11886, Western blottingAll lanes: Anti FOXO1A (ABO11886) at 0.5ug/mlLane 1: Rat Lung Tissue Lysate at 50ugLane 2: Rat Brain Tissue Lysate at 50ugLane 3: COLO320 Whole Cell Lysate at 40ug Lane 4: HEPG2 Whole Cell Lysate at 40ugPredicted bind size: 70KDObserved bind size: 70KD

Anti-FOXO1A Picoband Antibody - Background

Forkhead box protein O1, also known as FKHR or FOXO1A, is a protein that in humans is encoded by the FOXO1 gene. It is mapped to 13q14.11. This gene belongs to the forkhead family of transcription factors which are characterized by a distinct forkhead domain. FOXO1 plays important roles in regulation of gluconeogenesis and glycogenolysis by insulin signaling, and is also central to the decision for a preadipocyte to commit to adipogenesis. This gene is primarily regulated through phosphorylation on multiple residues. Its transcriptional activity is dependent on its phosphorylation state. What's more, FOXO1 may play a role in myogenic growth and differentiation. Translocation of this gene with PAX3 has been associated with alveolar rhabdomyosarcoma.