10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1325

Specification

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	O43524
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 71 kDa; observed, 82 kDa KDa**
Gene Name	**FOXO3**
Aliases	**FOXO3; Forkhead Box O3; AF6q21; FKHRL1; FOXO3A; FOXO2; Forkhead In Rhabdomyosarcoma-Like 1; Forkhead Box Protein O3; Forkhead, Drosophila, Homolog Of, In Rhabdomyosarcoma-Like 1; Forkhead Homolog (Rhabdomyosarcoma) Like 1; Forkhead Box O3A; AF6q21 Protein; FKHRL1P2; FOXO3A-**
Immunogen	**A synthesized peptide derived from human FoxO3a**

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**2309**

Other Names
Forkhead box protein O3, AF6q21 protein, Forkhead in rhabdomyosarcoma-like 1, FOXO3 (HGNC:3821)

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal Antibody - Protein Information

Name FOXO3 (HGNC:3821)

Function
Transcriptional activator that recognizes and binds to the DNA sequence 5'-[AG]TAAA[TC]A-3' and regulates different processes, such as apoptosis and autophagy (PubMed:10102273, PubMed:16751106, PubMed:21329882, PubMed:30513302). Acts as a positive regulator of autophagy in skeletal muscle: in starved cells, enters the nucleus following dephosphorylation and binds the promoters of autophagy genes, such as GABARAP1L, MAP1LC3B and ATG12, thereby activating their expression, resulting in proteolysis of skeletal muscle proteins (By similarity). Triggers apoptosis in the absence of survival factors, including neuronal cell death upon oxidative stress (PubMed:<a href="http://www.uniprot.org/citations/10102273"

target="_blank">10102273, PubMed:16751106). Participates in post-transcriptional regulation of MYC: following phosphorylation by MAPKAPK5, promotes induction of miR- 34b and miR-34c expression, 2 post-transcriptional regulators of MYC that bind to the 3'UTR of MYC transcript and prevent its translation (PubMed:21329882). In response to metabolic stress, translocates into the mitochondria where it promotes mtDNA transcription (PubMed:23283301). In response to metabolic stress, translocates into the mitochondria where it promotes mtDNA transcription. 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). Also acts as a key regulator of regulatory T-cells (Treg) differentiation by activating expression of FOXP3 (PubMed:30513302).

Cellular Location
Cytoplasm, cytosol. Nucleus Mitochondrion matrix. Mitochondrion outer membrane; Peripheral membrane protein; Cytoplasmic side. Note=Retention in the cytoplasm contributes to its inactivation (PubMed:10102273, PubMed:15084260, PubMed:16751106). Translocates to the nucleus upon oxidative stress and in the absence of survival factors (PubMed:10102273, PubMed:16751106) Translocates from the cytosol to the nucleus following dephosphorylation in response to autophagy-inducing stimuli (By similarity). Translocates in a AMPK-dependent manner into the mitochondrion in response to metabolic stress (PubMed:23283301, PubMed:29445193). Serum deprivation increases localization to the nucleus, leading to activate expression of SOX9 and subsequent chondrogenesis (By similarity). {ECO:0000250|UniProtKB:Q9WVH4, ECO:0000269|PubMed:10102273, ECO:0000269|PubMed:15084260, ECO:0000269|PubMed:16751106, ECO:0000269|PubMed:23283301, ECO:0000269|PubMed:29445193}

Tissue Location
Ubiquitous..

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal 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

KD-Validated Anti-Forkhead Box O3 Rabbit Monoclonal Antibody - Images

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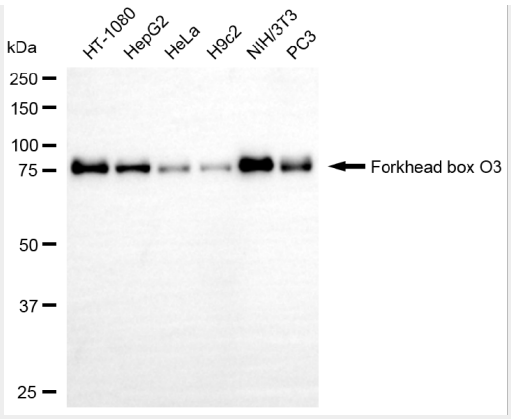
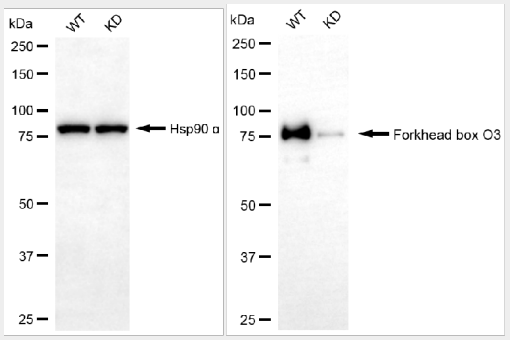
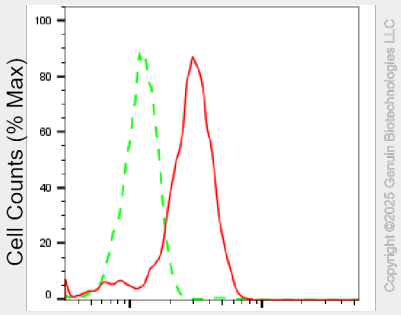


Western blotting analysis using anti-forkhead box O3 antibody (Cat#AGI1325). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-forkhead box O3 antibody (Cat#AGI1325, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

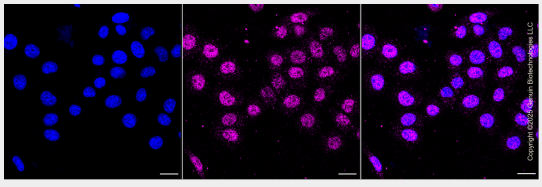


Western blotting analysis using anti-forkhead box O3 antibody (Cat#AGI1325). Forkhead box O3 expression in wild-type (WT) and forkhead box O3 (FOXO3) knockdown (KD) HSHC cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-forkhead box O3 antibody (Cat#AGI1325, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Forkhead box O3-Alexa Fluor® 647

Flow cytometric analysis of Forkhead box O3 expression in HepG2 cells using anti-Forkhead box O3 antibody (Cat#AGI1325, 1:2,000). Green, isotype control; red, Forkhead box O3.



Immunocytochemical staining of HepG2 cells with anti-Forkhead box O3 antibody (Cat#AGI1325,

1:1,000). Nuclei were stained blue with DAPI; Forkhead box O3 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 µm.