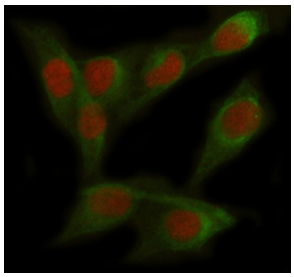
FOXC2 Antibody / Forkhead box protein C2 (FY12456)

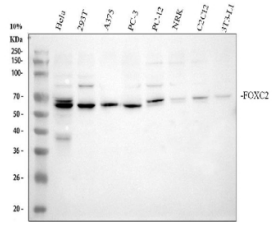
Catalog No.	Formulation	Size
FY12456	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

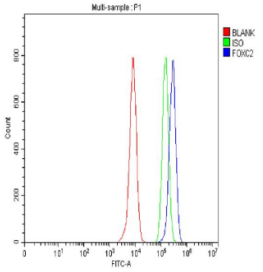
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q99958
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This FOXC2 antibody is available for research use only.



Immunofluorescent staining of FOXC2 using anti-FOXC2 antibody (red) and anti-Tubulin Alpha antibody (green). FOXC2 was detected in immunocytochemical section of Hela cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-FOXC2 antibody and mouse anti-Tubulin Alpha antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and FITC Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of FOXC2 using anti-FOXC2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat PC-12 whole cell lysates, Lane 6: rat NRK whole cell lysates, Lane 7: mouse C2C12 whole cell lysates, Lane 8: mouse 3T3-L1 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-FOXC2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substratewith Tanon 5200 system. FOXC2 (~54 kDa predicted) was detected at ~58-60 kDa, consistent with phosphorylation- and SUMOylation-dependent mobility shifts reported for this transcription factor



Flow Cytometry analysis of Hela cells using anti-FOXC2 antibody. Overlay histogram showing Hela cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-FOXC2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

FOXC2 antibody detects Forkhead box protein C2, a transcription factor belonging to the forkhead family characterized by a conserved DNA-binding forkhead domain. FOXC2 plays essential roles in embryonic development, angiogenesis, lymphangiogenesis, adipose differentiation, and epithelial-mesenchymal transition (EMT). It regulates transcriptional programs that control cell fate and morphogenesis in multiple tissues. The FOXC2 antibody is widely employed to investigate vascular development, cancer metastasis, and metabolic regulation, as FOXC2 activity is tightly linked to both physiological and pathological tissue remodeling.

FOXC2 is encoded by the FOXC2 gene located on human chromosome 16q24.1. It binds to promoter regions of target genes containing the forkhead consensus sequence and activates transcription of genes involved in cell migration and morphogenesis. In the vascular system, FOXC2 controls differentiation of lymphatic endothelial cells and formation of lymphatic valves. Mutations in FOXC2 cause lymphedema-distichiasis syndrome, characterized by lymphatic dysfunction and abnormal eyelash growth.

The FOXC2 antibody is frequently used in developmental and cancer research to detect protein expression in tissue sections and cultured cells. Western blot analysis typically reveals a 50Ã¯Â¿Â½55 kDa nuclear protein, while immunohistochemistry demonstrates nuclear staining in endothelial and mesenchymal cells. In cancer biology, FOXC2 serves as a key regulator of EMT and is upregulated in aggressive tumors, where it promotes invasion, metastasis, and resistance to chemotherapy.

FOXC2 also contributes to adipose tissue differentiation and energy homeostasis by regulating genes that determine brown adipocyte lineage. It functions in cooperation with transcription factors such as PPARgamma and PRDM16. Beyond developmental and metabolic functions, FOXC2 is implicated in cardiac valve formation and osteogenesis. NSJ Bioreagents provides a validated FOXC2 antibody suitable for western blot, immunohistochemistry, and chromatin studies, supporting advanced research into developmental genetics, vascular biology, and tumor progression.

Application Notes

Optimal dilution of the FOXC2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human FOXC2 recombinant protein (Position: L200-Y501) was used as the immunogen for the FOXC2 antibody.

Storage

After reconstitution, the FOXC2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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