

FOXC2 (G-14): sc-31733

BACKGROUND

FOXC2 is a member of forkhead/winged helix transcription factor family whose members serve as key regulators in embryogenesis and cell differentiation. FOXC2 functions as a key regulator of adipocyte metabolism by increasing the sensitivity of the β -adrenergic-cAMP-protein kinase A (PKA) signaling pathway through alteration of adipocyte PKA holoenzyme composition. Increased FOXC2 levels, induced by high fat diet, seem to counteract most of the symptoms associated with obesity. FOXC2 expression is also associated with the early stage of chondrogenic differentiation both *in vivo* and *in vitro*. FOXC2 haploinsufficiency results in Lymphedema-distichiasis (LD), an autosomal dominant disorder that classically presents as lymphedema of the limbs and double rows of eyelashes (distichiasis). Mutant mice null for FOXC2 show defects in axial and cranial skeletogenesis, suggesting a requirement of FOXC2 for skeletal tissue development. FOXC2 interacts with FOXC1 in the Notch signaling pathway and in kidney and heart development.

REFERENCES

1. Kume, T., Deng, K. and Hogan, B.L. 2000. Murine forkhead/winged helix genes *Foxc1* (Mf1) and *Foxc2* (Mfh1) are required for the early organogenesis of the kidney and urinary tract. *Development* 127: 1387-1395.
2. Fang, J., Dagenais, S.L., Erickson, R.P., Arlt, M.F., Glynn, M.W., Gorski, J.L., Seaver, L.H. and Glover, T.W. 2000. Mutations in FOXC2 (MFH-1), a forkhead family transcription factor, are responsible for the hereditary lymphedema-distichiasis syndrome. *Am. J. Hum. Genet.* 67: 1382-1388.
3. Kume, T., Jiang, H., Topczewska, J.M. and Hogan, B.L. 2001. The murine winged helix transcription factors, *Foxc1* and *Foxc2*, are both required for cardiovascular development and somitogenesis. *Genes Dev.* 15: 2470-2482.
4. Nifuji, A., Miura, N., Kato, N., Kellermann, O. and Noda, M. 2001. Bone morphogenetic protein regulation of forkhead/winged helix transcription factor *Foxc2* (Mfh1) in a murine mesodermal cell line C1 and in skeletal precursor cells. *J. Bone Miner. Res.* 16: 1765-1771.
5. Cederberg, A., Gronning, L.M., Ahren, B., Tasken, K., Carlsson, P. and Enerback, S. 2001. FOXC2 is a winged helix gene that counteracts obesity, hypertriglyceridemia, and diet-induced Insulin resistance. *Cell* 106: 563-573.

CHROMOSOMAL LOCATION

Genetic locus: FOXC2 (human) mapping to 16q24.1; *Foxc2* (mouse) mapping to 8 E1.

SOURCE

FOXC2 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FOXC2 of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-31733 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-31733 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

FOXC2 (G-14) is recommended for detection of FOXC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FOXC2 siRNA (h): sc-43767, FOXC2 siRNA (m): sc-45366, FOXC2 shRNA Plasmid (h): sc-43767-SH, FOXC2 shRNA Plasmid (m): sc-45366-SH, FOXC2 shRNA (h) Lentiviral Particles: sc-43767-V and FOXC2 shRNA (m) Lentiviral Particles: sc-45366-V.

FOXC2 (G-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of FOXC2: 62 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **FOXC2 (G-7): sc-515234** or **FOXC2 (D-8): sc-515472**, our highly recommended monoclonal alternatives to FOXC2 (G-14).