SANTA CRUZ BIOTECHNOLOGY, INC.

FOXC2 (D-8): sc-515472

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 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., et al. 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., et al. 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., et al. 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.

CHROMOSOMAL LOCATION

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

SOURCE

FOXC2 (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 333-357 within an internal region of FOXC2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain 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-515472 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-515472 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

FOXC2 (D-8) is recommended for detection of FOXC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 (D-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

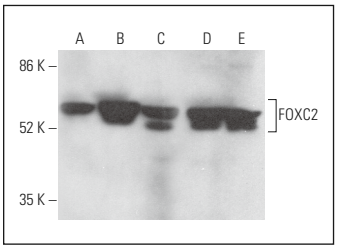
Molecular Weight of FOXC2: 62 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, Jurkat whole cell lysate: sc-2204 or U-87 MG cell lysate: sc-2411.

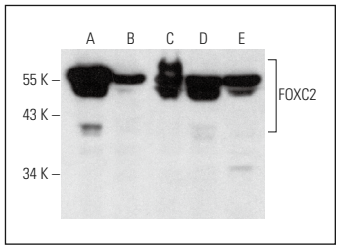
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



FOXC2 (D-8): sc-515472. Western blot analysis of FOXC2 expression in 3T3-L1 (**A**), C3H/10T1/2 (**B**), CCRF-CEM (**C**), C6 (**D**) and 3611-RF (**E**) whole cell lysates.



FOXC2 (D-8): sc-515472. Western blot analysis of FOXC2 expression in U-87 MG (**A**), Jurkat (**B**), C2C12 (**C**), RAW 264.7 (**D**) and KNRK (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hargadon, K.M., et al. 2019. The FOXC2 transcription factor promotes melanoma outgrowth and regulates expression of genes associated with drug resistance and interferon responsiveness. Cancer Genomics Proteomics 16: 491-503.

RESEARCH USE

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