

FOXE3 (G-4): sc-377443

BACKGROUND

The human forkhead-box (FOX) gene family consists of at least 43 members, including FOXE3, a 288-amino acid protein. FOXE3 is a winged-helix transcription factor that plays a crucial role during the initial stages of lens development and closure of the lens vesicle. FOXE3 may also act as a factor that promotes survival and proliferation while preventing differentiation in the lens epithelium. As the posterior cells of the lens fiber begin to differentiate, expression of FOXE3 is limited to the undifferentiated cells coating the anterior surface of the lens. Congenital primary aphakia (CPA) is a rare developmental disorder caused by a null mutation in the FOXE3 gene that is identified by the absence of a lens. The development of CPA is normally stimulated during the 4 or 15 week of human embryogenesis.

REFERENCES

1. Blixt, A., Mahlapuu, M., Aitola, M., Pelto-Huikko, M., Enerbäck, S. and Carlsson, P. 2000. A forkhead gene, FOXE3, is essential for lens epithelial proliferation and closure of the lens vesicle. *Genes Dev.* 14: 245-254.
2. Brownell, I., Dirksen, M. and Jamrich, M. 2000. Forkhead FOXE3 maps to the dysgenetic lens locus and is critical in lens development and differentiation. *Genesis* 27: 81-93.
3. Semina, E.V., Brownell, I., Mintz-Hittner, H.A., Murray, J.C. and Jamrich, M. 2001. Mutations in the human forkhead transcription factor FOXE3 associated with anterior segment ocular dysgenesis and cataracts. *Hum. Mol. Genet.* 10: 231-236.
4. Lang, R.A. 2004. Pathways regulating lens induction in the mouse. *Int. J. Dev. Biol.* 48: 783-791.
5. Katoh, M. and Katoh, M. 2004. Human FOX gene family (Review). *Int. J. Oncol.* 25: 1495-1500.
6. Yoshimoto, A., Saigou, Y., Higashi, Y. and Kondoh, H. 2005. Regulation of ocular lens development by Smad-interacting protein 1 involving FOXE3 activation. *Development* 132: 4437-4448.
7. Medina-Martinez, O., Brownell, I., Amaya-Manzanares, F., Hu, Q., Behringer, R.R. and Jamrich, M. 2005. Severe defects in proliferation and differentiation of lens cells in FOXE3 null mice. *Mol. Cell. Biol.* 25: 8854-8863.

CHROMOSOMAL LOCATION

Genetic locus: FOXE3 (human) mapping to 1p33; Foxe3 (mouse) mapping to 4 D1.

SOURCE

FOXE3 (G-4) is a mouse monoclonal antibody raised against amino acids 232-288 mapping at the C-terminus of FOXE3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₃ 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-377443 X, 200 µg/0.1 ml.

APPLICATIONS

FOXE3 (G-4) is recommended for detection of FOXE3 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 FOXE3 siRNA (h): sc-60653, FOXE3 siRNA (m): sc-60654, FOXE3 shRNA Plasmid (h): sc-60653-SH, FOXE3 shRNA Plasmid (m): sc-60654-SH, FOXE3 shRNA (h) Lentiviral Particles: sc-60653-V and FOXE3 shRNA (m) Lentiviral Particles: sc-60654-V.

FOXE3 (G-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

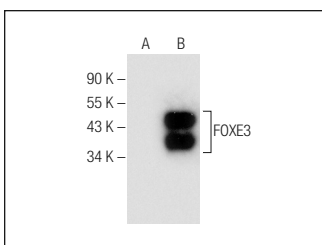
Molecular Weight of FOXE3: 33 kDa.

Positive Controls: FOXE3 (h): 293T Lysate: sc-372347.

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



FOXE3 (G-4): sc-377443. Western blot analysis of FOXE3 expression in non-transfected: sc-117752 (A) and human FOXE3 transfected: sc-372347 (B) 293T whole cell lysates.

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.