

# FOXE3 (K-18): sc-48163

## 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 fourth or fifth week of human embryogenesis.

## REFERENCES

1. Blixt, A., et al. 2000. A forkhead gene, FOXE3, is essential for lens epithelial proliferation and closure of the lens vesicle. *Genes Dev.* 14: 245-54.
2. Brownell, I., et al. 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., et al. 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., et al. 2004. Human FOX gene family (Review). *Int. J. Oncol.* 25: 1495-500.
6. Yoshimoto, A., et al. 2005. Regulation of ocular lens development by Smad-interacting protein 1 involving FOXE3 activation. *Development* 132: 4437-448.
7. Medina-Martinez, O., et al. 2005. Severe defects in proliferation and differentiation of lens cells in Foxe3 null mice. *Mol. Cell. Biol.* 25: 8854-8863.
8. Zilinski, C., et al. 2005. Expression of FoxE4 and Rx visualizes the timing and dynamics of critical processes taking place during initial stages of vertebrate eye development. *Dev. Neurosci.* 26: 294-307.

## CHROMOSOMAL LOCATION

Genetic locus: FOXE3 (human) mapping to 1p32.

## SOURCE

FOXE3 (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FOXE3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-48163 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-48163 X, 200 µg/0.1 ml.

## APPLICATIONS

FOXE3 (K-18) is recommended for detection of FOXE3 of human origin by Western Blotting (starting dilution 1:200, 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 shRNA Plasmid (h): sc-60653-SH and FOXE3 shRNA (h) Lentiviral Particles: sc-60653-V.

FOXE3 (K-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

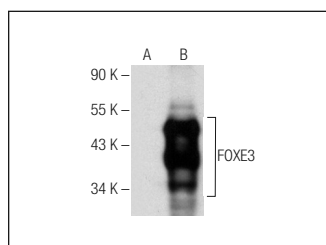
Molecular Weight of FOXE3: 33 kDa.

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

## RECOMMENDED 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



FOXE3 (K-18): sc-48163. 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.