

# NOBOX (D-16): sc-102040

## BACKGROUND

Early ovarian folliculogenesis is characterized by the breakdown of germ cell clusters and formation of primordial follicles. The cessation of ovarian function under the age of 40 years results in premature ovarian failure (POF) and is accompanied by amenorrhea, hypoestrogenism and elevated serum gonadotropin concentrations. 1% of all women are affected by POF, and mutations in a few genes, including inhibin  $\alpha$ , FSH receptor and the LH/choriogonadotropin receptor have been linked to POF. In addition, several germ cell specific genes and downstream transcription factors are thought to play an important role in human oogenesis. NOBOX (newborn ovary homeobox gene), an oocyte-specific homeobox gene, is a critical protein involved in early folliculogenesis. Missense mutations have been shown to cause nonsyndromic ovarian failure by disrupting the NOBOX proteins ability to bind to NOBOX DNA-binding element (NBE), and thereby inhibiting its regulation of Pou5f1 and GDF-9. NOBOX expression in the ovary is oocyte specific, but it shows expression in adult testis and pancreas as well.

## REFERENCES

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- Rajkovic, A., et al. 2004. NOBOX deficiency disrupts early folliculogenesis and oocyte-specific gene expression. *Science* 305: 1157-1159.
- Zhao, X.X., et al. 2005. Mutational analysis of the homeobox region of the human NOBOX gene in Japanese women who exhibit premature ovarian failure. *Fertil. Steril.* 83: 1843-1844.
- Choi, Y. and Rajkovic, A. 2006. Genetics of early mammalian folliculogenesis. *Cell. Mol. Life Sci.* 63: 579-590.
- Choi, Y. and Rajkovic, A. 2006. Characterization of NOBOX DNA binding specificity and its regulation of GDF-9 and Pou5f1 promoters. *J. Biol. Chem.* 281: 35747-35756.
- Huntriss, J., et al. 2006. cDNA cloning and expression of the human NOBOX gene in oocytes and ovarian follicles. *Mol. Hum. Reprod.* 12: 283-289.
- Qin, Y., et al. 2007. NOBOX homeobox mutation causes premature ovarian failure. *Am. J. Hum. Genet.* 81: 576-581.
- Choi, Y., et al. 2007. Microarray analyses of newborn mouse ovaries lacking NOBOX. *Biol. Reprod.* 77: 312-319.

## CHROMOSOMAL LOCATION

Genetic locus: NOBOX (human) mapping to 7q35.

## SOURCE

NOBOX (D-16) is a purified rabbit polyclonal antibody raised against NOBOX 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.

## PRODUCT

Each vial contains 50  $\mu$ g IgG in 500  $\mu$ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## APPLICATIONS

NOBOX (D-16) is recommended for detection of NOBOX of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 NOBOX siRNA (h): sc-89594, NOBOX shRNA Plasmid (h): sc-89594-SH and NOBOX shRNA (h) Lentiviral Particles: sc-89594-V.

Molecular Weight (predicted) of NOBOX: 74 kDa.

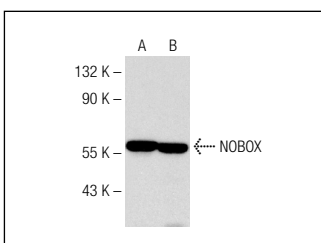
Molecular Weight (observed) of NOBOX: 56 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MIA PaCa-2 cell lysate: sc-2285 or ES-2 cell lysate: sc-24674.

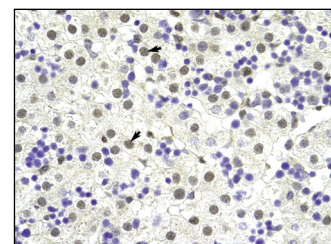
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



NOBOX (D-16): sc-102040. Western blot analysis of NOBOX expression in MIA PaCa-2 (A) and ES-2 (B) whole cell lysates.



NOBOX (D-16): sc-102040. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing nuclear and cytoplasmic staining.

## RESEARCH USE

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