

# NELF-B (C-19): sc-79991

## BACKGROUND

NELF-B (negative elongation factor B), also known as COBRA1 (cofactor of BRCA1), is a 580 amino acid protein that localizes to the nucleus and exists as a component of the multi-protein NELF complex, a structure which negatively regulates Pol II-dependent transcription elongation. Expressed in a variety of tissues, including liver, heart, kidney, lung, brain, placenta and pancreas, NELF-B is involved in controlling transcriptional pausing of Pol II and may be able to induce chromatin unfolding, possibly playing a role in tumorigenesis. The gene encoding NELF-B maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and Familial dysautonomia, are both associated with chromosome 9. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

## REFERENCES

1. Hirosawa, M., Nagase, T., Ishikawa, K., Kikuno, R., Nomura, N. and Ohara, O. 1999. Characterization of cDNA clones selected by the GeneMark analysis from size-fractionated cDNA libraries from human brain. *DNA Res.* 6: 329-336.
2. Ye, Q., Hu, Y.F., Zhong, H., Nye, A.C., Belmont, A.S. and Li, R. 2001. BRCA1-induced large-scale chromatin unfolding and allele-specific effects of cancer-predisposing mutations. *J. Cell Biol.* 155: 911-921.
3. Narita, T., Yamaguchi, Y., Yano, K., Sugimoto, S., Chanarat, S., Wada, T., Kim, D.K., Hasegawa, J., Omori, M., Inukai, N., Endoh, M., Yamada, T. and Handa, H. 2003. Human transcription elongation factor NELF: identification of novel subunits and reconstitution of the functionally active complex. *Mol. Cell. Biol.* 23: 1863-1873.
4. Zhong, H., Zhu, J., Zhang, H., Ding, L., Sun, Y., Huang, C. and Ye, Q. 2004. COBRA1 inhibits AP-1 transcriptional activity in transfected cells. *Biochem. Biophys. Res. Commun.* 325: 568-573.
5. McChesney, P.A., Aiyar, S.E., Lee, O.J., Zaika, A., Moskaluk, C., Li, R. and El-Rifai, W. 2006. Cofactor of BRCA1: a novel transcription factor regulator in upper gastrointestinal adenocarcinomas. *Cancer Res.* 66: 1346-1353.
6. Aiyar, S.E., Cho, H., Lee, J. and Li, R. 2007. Concerted transcriptional regulation by BRCA1 and COBRA1 in breast cancer cells. *Int. J. Biol. Sci.* 3: 486-492.
7. Zhang, Z., Klatt, A., Gilmour, D.S. and Henderson, A.J. 2007. Negative elongation factor NELF represses human immunodeficiency virus transcription by pausing the RNA polymerase II complex. *J. Biol. Chem.* 282: 16981-16988.
8. Sun, J., Blair, A.L., Aiyar, S.E. and Li, R. 2007. Cofactor of BRCA1 modulates androgen-dependent transcription and alternative splicing. *J. Steroid Biochem. Mol. Biol.* 107: 131-139.
9. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611180. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## RESEARCH USE

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

## CHROMOSOMAL LOCATION

Genetic locus: COBRA1 (human) mapping to 9q34.3; Cobra1 (mouse) mapping to 2 A3.

## SOURCE

NELF-B (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of NELF-B 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-79991 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-79991 X, 200 µg/0.1 ml.

## APPLICATIONS

NELF-B (C-19) is recommended for detection of NELF-B 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).

NELF-B (C-19) is also recommended for detection of NELF-B in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for NELF-B siRNA (h): sc-75896, NELF-B siRNA (m): sc-75897, NELF-B shRNA Plasmid (h): sc-75896-SH, NELF-B shRNA Plasmid (m): sc-75897-SH, NELF-B shRNA (h) Lentiviral Particles: sc-75896-V and NELF-B shRNA (m) Lentiviral Particles: sc-75897-V.

NELF-B (C-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NELF-B: 62 kDa.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## STORAGE

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