

# BOP1 (E-14): sc-86985

## BACKGROUND

Predominantly localized to the nucleolus, BOP1 (block of proliferation 1 protein) is a 746 amino acid highly conserved non-ribosomal protein that is involved in ribosome biogenesis. Truncation of the amino terminus of BOP1 leads to cell growth arrest in the G<sub>1</sub> phase and specific inhibition of 28S and 5.8S rRNA synthesis, as well as a deficit in the cytosolic 60S ribosomal subunit. This suggests that BOP1 is involved in the formation of mature rRNAs and in the biogenesis of the 60S ribosomal subunit. BOP1 physically interacts with pescadillo (a protein involved in cell proliferation) and enables efficient incorporation of pescadillo into the nucleolar preribosomal complexes, thereby affecting rRNA maturation and the cell cycle. The BOP1-pescadillo complex is also necessary for biogenesis of 60S ribosomal subunits. Deregulation of BOP1 may lead to colorectal tumorigenesis.

## REFERENCES

1. Strezoska, Z., et al. 2000. BOP1 is a mouse WD40 repeat nucleolar protein involved in 28S and 5.8S rRNA processing and 60S ribosome biogenesis. *Mol. Cell. Biol.* 20: 5516-5528.
2. Pestov, D.G., et al. 2001. Evidence of p53-dependent cross-talk between ribosome biogenesis and the cell cycle: effects of nucleolar protein BOP1 on G<sub>1</sub>/S transition. *Mol. Cell. Biol.* 21: 4246-4255.
3. Pestov, D.G., et al. 2001. ERB1, the yeast homolog of mammalian Bop1, is an essential gene required for maturation of the 25S and 5.8S ribosomal RNAs. *Nucleic Acids Res.* 29: 3621-3630.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610596. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Lapik, Y.R., et al. 2004. Physical and functional interaction between Pes1 and BOP1 in mammalian ribosome biogenesis. *Mol. Cell* 15: 17-29.
6. Hölzel, M., et al. 2005. Mammalian WDR12 is a novel member of the Pes1-BOP1 complex and is required for ribosome biogenesis and cell proliferation. *J. Cell Biol.* 170: 367-378.
7. Killian, A., et al. 2006. Contribution of the BOP1 gene, located on 8q24, to colorectal tumorigenesis. *Genes Chromosomes Cancer* 45: 874-881.

## CHROMOSOMAL LOCATION

Genetic locus: BOP1 (human) mapping to 8q24.3; Bop1 (mouse) mapping to 15 D3.

## SOURCE

BOP1 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BOP1 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-86985 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

BOP1 (E-14) is recommended for detection of BOP1 of mouse, rat and 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).

BOP1 (E-14) is also recommended for detection of BOP1 in additional species, including equine and bovine.

Suitable for use as control antibody for BOP1 siRNA (h): sc-77739, BOP1 siRNA (m): sc-141727, BOP1 shRNA Plasmid (h): sc-77739-SH, BOP1 shRNA Plasmid (m): sc-141727-SH, BOP1 shRNA (h) Lentiviral Particles: sc-77739-V and BOP1 shRNA (m) Lentiviral Particles: sc-141727-V.

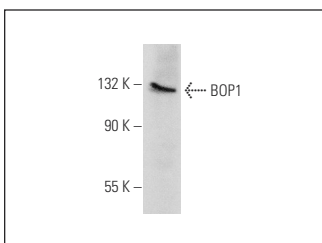
Molecular Weight of BOP1: 100 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, SW480 nuclear extract: sc-2155 or HeLa nuclear extract: sc-2120.

## 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



BOP1 (E-14): sc-86985. Western blot analysis of BOP1 expression in KNRK nuclear extract.

## 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.