

BOP1 (E-1): sc-390672

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 G₁ 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.

CHROMOSOMAL LOCATION

Genetic locus: BOP1 (human) mapping to 8q24.3.

SOURCE

BOP1 (E-1) is a mouse monoclonal antibody raised against amino acids 120-315 mapping within an internal region of BOP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BOP1 (E-1) is available conjugated to agarose (sc-390672 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390672 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390672 PE), fluorescein (sc-390672 FITC), Alexa Fluor® 488 (sc-390672 AF488), Alexa Fluor® 546 (sc-390672 AF546), Alexa Fluor® 594 (sc-390672 AF594) or Alexa Fluor® 647 (sc-390672 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390672 AF680) or Alexa Fluor® 790 (sc-390672 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

BOP1 (E-1) is recommended for detection of BOP1 of 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 BOP1 siRNA (h): sc-77739, BOP1 shRNA Plasmid (h): sc-77739-SH and BOP1 shRNA (h) Lentiviral Particles: sc-77739-V.

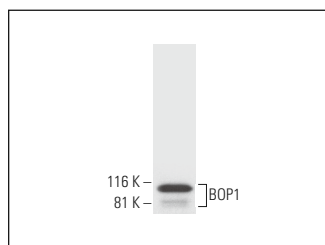
Molecular Weight of BOP1: 100 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262.

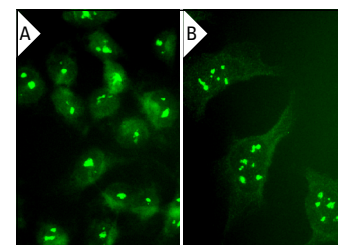
RECOMMENDED SUPPORT REAGENTS

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



BOP1 (E-1): sc-390672. Western blot analysis of BOP1 expression in Caco-2 whole cell lysate.



BOP1 (E-1): sc-390672. Immunofluorescence detection of BOP1 in methanol-fixed HeLa cells showing nucleolar and nuclear localization. Detection reagent used: m-IgGκ BP-FITC: sc-516140 (A). Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar localization (B).

SELECT PRODUCT CITATIONS

- Wu, Q., et al. 2019. Abnormal ribosome biogenesis partly induced p53-dependent aortic medial smooth muscle cell apoptosis and oxidative stress. *Oxid. Med. Cell. Longev.* 2019: 7064319.
- Houston, R., et al. 2020. Acetylation-mediated remodeling of the nucleolus regulates cellular acetyl-CoA responses. *PLoS Biol.* 18: e3000981.
- Chen, B., et al. 2020. The long noncoding RNA CCAT2 induces chromosomal instability through BOP1-AURKB signaling. *Gastroenterology* 159: 2146-2162.e33.
- Wang, X., et al. 2021. SOD1 regulates ribosome biogenesis in KRAS mutant non-small cell lung cancer. *Nat. Commun.* 12: 2259.
- Yang, Y.P., et al. 2021. BOP1 silencing suppresses gastric cancer proliferation through p53 modulation. *Curr. Med. Sci.* 41: 287-296.
- Li, J., et al. 2023. PDGF-C promotes cell proliferation partially via down-regulating BOP1. *Cell Biol. Int.* 47: 1942-1949.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.