

# Borealin (A-5): sc-376635

## BACKGROUND

Borealin is a 280-amino acid protein that stabilizes the bipolar mitotic spindle. Borealin is part of a complex called Aurora B kinase that has essential regulatory roles at centromeres and the central spindle in cells undergoing mitosis. This complex makes up the enzymatic core of the chromosomal passenger complex (CPC). It is possible that the Borealin subunit directs the CPC to centromeric DNA. Deletion of Borealin delays mitotic progression and causes kinetochore-spindle to mis-attach. Deletion also causes an increase in bipolar spindles associated with ectopic asters. These extra poles, which form after chromosomes acquire their bipolar orientation, seriously disrupt chromosome allotment during anaphase. It is true that inappropriate chromosomal segregation and cell division may cause aneuploidy leading to cancer, so an abnormal expression of Borealin may lead to gastric cancer.

## CHROMOSOMAL LOCATION

Genetic locus: CDCA8 (human) mapping to 1p34.3; Cdca8 (mouse) mapping to 4 D2.2.

## SOURCE

Borealin (A-5) is a mouse monoclonal antibody raised against amino acids 46-86 mapping near the N-terminus of Borealin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Borealin (A-5) is available conjugated to agarose (sc-376635 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376635 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376635 PE), fluorescein (sc-376635 FITC), Alexa Fluor® 488 (sc-376635 AF488), Alexa Fluor® 546 (sc-376635 AF546), Alexa Fluor® 594 (sc-376635 AF594) or Alexa Fluor® 647 (sc-376635 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376635 AF680) or Alexa Fluor® 790 (sc-376635 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Borealin (A-5) is recommended for detection of Borealin of mouse, rat and 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 Borealin siRNA (h): sc-60277, Borealin siRNA (m): sc-60278, Borealin shRNA Plasmid (h): sc-60277-SH, Borealin shRNA Plasmid (m): sc-60278-SH, Borealin shRNA (h) Lentiviral Particles: sc-60277-V and Borealin shRNA (m) Lentiviral Particles: sc-60278-V.

Molecular Weight (predicted) of Borealin: 31 kDa.

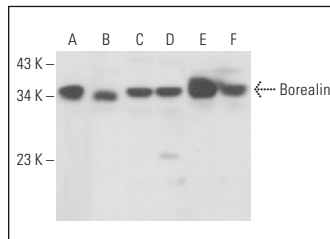
Molecular Weight (observed) of Borealin: 31-36 kDa.

Positive Controls: U-251-MG whole cell lysate: sc-364176, Jurkat whole cell lysate: sc-2204 or Caco-2 cell lysate: sc-2262.

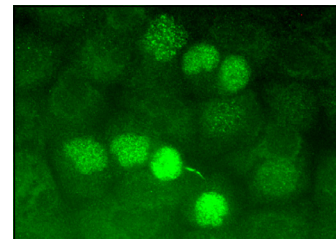
## STORAGE

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

## DATA



Borealin (A-5): sc-376635. Western blot analysis of Borealin expression in Caco-2 (A), Ramos (B), U-251-MG (C), KNRK (D), HL-60 (E) and Jurkat (F) whole cell lysates.



Borealin (A-5): sc-376635. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear localization in a subset of cells.

## SELECT PRODUCT CITATIONS

- Lee, S., et al. 2016. IK-guided PP2A suppresses Aurora B activity in the interphase of tumor cells. *Cell. Mol. Life Sci.* 73: 3375-3386.
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- Sun, M., et al. 2019. Targeting the chromosomal passenger complex subunit INCENP induces polyploidization, apoptosis, and senescence in neuroblastoma. *Cancer Res.* 79: 4937-4950.
- Serena, M., et al. 2020. Molecular basis of MKLP2-dependent Aurora B transport from chromatin to the anaphase central spindle. *J. Cell Biol.* 219: e201910059.
- Petsalaki, E. and Zachos, G. 2021. An Atm-Chk2-INCENP pathway activates the abscission checkpoint. *J. Cell Biol.* 220: e202008029.
- Flashner, S., et al. 2022. Transcription factor Sp1 regulates mitotic chromosome assembly and segregation. *Chromosoma* 131: 175-191.
- Garlapati, C., et al. 2023. PLK1 and AURKB phosphorylate survivin differentially to affect proliferation in racially distinct triple-negative breast cancer. *Cell Death Dis.* 14: 12.
- Chen, E., et al. 2023. CDCA8 induced by NF- $\kappa$ B promotes hepatocellular carcinoma progression by regulating the MEK/ERK pathway. *Exp. Hematol. Oncol.* 12: 9.
- Wu, Y., et al. 2023. A 1-kb human CDCA8 promoter directs the spermatogonia-specific luciferase expression in adult testis. *Gene.* 866: 147350.
- Ota, R., et al. 2023. v-Src delocalizes Aurora B by suppressing Aurora B kinase activity during monopolar cytokinesis. *Cell. Signal.* 109: 110764.

## RESEARCH USE

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

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