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SANTA CRUZ BIOTECHNOLOGY, INC.

Bora siRNA (m): sc-141728

BACKGROUND

Aurora related kinase-1 (ARK-1) is a centrosome-associated serine/threonine kinase that regulates centrosome separation, bipolar spindle assembly and chromosome segregation during mitosis. Bora (protein aurora borealis) is a 559 amino acid protein that activates ARK-1. Bora is localized to the nucleus until mitosis is initiated, when it then translocates to the cytoplasm. This translocation is dependent on activated Cdc2, which releases Bora to bind and activate ARK-1 in the cytoplasm. Plk (polo-like kinase) interacts with Bora to control the accessibility of its activation loop for phosphorylation and activation on its N-terminus by ARK-1. It is through this mechanism that Bora and ARK-1 control cellular mitotic entry. Downregulation of the gene encoding Bora results in multipolar spindles in mitosis, a phenomenon that is also observed when ARK-1 function is blocked.

REFERENCES

1. Berdnik, D. and Knoblich, J.A. 2002. *Drosophila* Aurora A is required for centrosome maturation and Actin-dependent asymmetric protein localization during mitosis. Curr. Biol. 12: 640-647.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603072. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Wiese, C. and O'Brien, L.L. 2006. What's so Bor(a)ing about Aurora A activation? Dev. Cell 11: 133-134.
4. Hutterer, A., Berdnik, D., Wirtz-Peitz, F., Zigman, M., Schleiffer, A. and Knoblich, J.A. 2006. Mitotic activation of the kinase Aurora A requires its binding partner Bora. Dev. Cell 11: 147-157.
5. Fu, J., Bian, M., Jiang, Q. and Zhang, C. 2007. Roles of Aurora kinases in mitosis and tumorigenesis. Mol. Cancer Res. 5: 1-10.
6. Seki, A., Coppinger, J.A., Jang, C.Y., Yates, J.R. and Fang, G. 2008. Bora and the kinase Aurora A cooperatively activate the kinase Plk1 and control mitotic entry. Science 320: 1655-1658.

CHROMOSOMAL LOCATION

Genetic locus: 6720463M24Rik (mouse) mapping to 14 E2.2.

PRODUCT

Bora siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bora shRNA Plasmid (m): sc-141728-SH and Bora shRNA (m) Lentiviral Particles: sc-141728-V as alternate gene silencing products.

For independent verification of Bora (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141728A, sc-141728B and sc-141728C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Bora siRNA (m) is recommended for the inhibition of Bora expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Bora (H-4): sc-393741 is recommended as a control antibody for monitoring of Bora gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bora gene expression knockdown using RT-PCR Primer: Bora (m)-PR: sc-141728-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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