Revision 1

Store at -20C

#12109

Bora (D2B9) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, FC-FP	H	Endogenous	80	Rabbit IgG	#Q6PGQ7	79866

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Flow Cytometry (Fixed/Permeabilized)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Bora (D2B9) Rabbit mAb recognizes endogenous levels of total Bora protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant protein specific to the carboxy terminus of human Bora protein.

Background

The eukaryotic cell cycle is carefully controlled by protein phosphorylation involving a number of phosphatases, kinases, and co-factors. Cyclin-dependent kinases (CDKs/cdcs), Polo-like kinases (PLKs), and Aurora kinases have been shown to be major regulators of mitotic control (reviewed in 1,2). Protein aurora borealis (Bora), a co-factor of Aurora-A first identified in *Drosophila*, also plays a key roll in cell cycle progression (3). Bora levels are low in G0/G1, increasing in S-phase and peaking at G2 (4). Found to be conserved from *C. elegans* to humans, Bora is translocated from the nucleus to the cytoplasm upon activation of cdc2 at the onset of mitosis. Once present in the cytoplasm, Bora binds to and activates Aurora-A and PLK1 (3-5). It has been proposed that the binding of human Bora to PLK1 may lead to a conformational change in the protein that disrupts the autoinhibition by the Polo-Box Domain (PBD). This would allow for Thr210 on PLK1 to become more accessible for phosphorylation by Aurora-A (reviewed in 6). Active PLK1 then initiates the PLK1-cdc25-cdc2 positive feedback loop, leading to mitotic entry and the phosphorylation of Bora. Once phosphorylated in prophase, Bora is degraded allowing for normal mitotic progression (7).

Background References

1. Nigg, E.A. (2001) *Nat Rev Mol Cell Biol* 2, 21-32.
2. Archambault, V. and Carmena, M. (2012) *Cell Cycle* 11, 1490-5.
3. Hutterer, A. et al. (2006) *Dev Cell* 11, 147-57.
4. Seki, A. et al. (2008) *Science* 320, 1655-8.
5. Chan, E.H. et al. (2008) *Chromosoma* 117, 457-69.
6. Macurek, L. et al. (2009) *Cancer Res* 69, 4555-8.
7. Seki, A. et al. (2008) *J Cell Biol* 181, 65-78.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human

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