Revision 6

Store at -20C

#3541

Phospho-NPM1 (Thr199) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	38	Rabbit	#P06748	4869

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

Phospho-NPM1 (Thr199) Antibody detects endogenous levels of NPM1 only when phosphorylated at Thr199.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Thr199 of human NPM1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Nucleophosmin (NPM; also known as B23, numatrin, or NO38) is an abundant phosphoprotein primarily found in nucleoli. It has been implicated in several distinct cellular functions, including assembly and transport of ribosomes, cytoplasmic/nuclear trafficking, regulation of DNA polymerase α activity, centrosome duplication, and molecular chaperoning activities (1,2). The *NPM* gene is also known for its fusion with the anaplastic lymphoma kinase (ALK) receptor tyrosine kinase. The NPM portion contributes to transformation by providing a dimerization domain, which results in activation of the fused kinase (3,4).

NPM associates with unduplicated centrosomes and is a direct substrate of Cdk2-cyclin E in centrosome duplication (4). Upon phosphorylation at Thr199 by Cdk2-cyclin E, NPM dissociates from centrosomes, and this dissociation is a prerequisite step for centrosome to initiate duplication (5).

Background References

1. Okuda, M. et al. (2000) *Cell* 103, 127-140.
2. Takemura, M. et al. (1999) *J. Biochem. (Tokyo)* 125, 904-909.
3. Morris, S.W. et al. (1994) *Science* 263, 1281-1284.
4. Bischof, D. et al. (1997) *Mol. Cell. Biol.* 17, 2312-2325.
5. Tokuyama, Y. et al. (2001) *J Biol Chem* 276, 21529-37.

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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Limited Uses

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