Revision 1

#4789 Store at -20C

Nucleomethylin Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	58	Rabbit	#O43159	23378

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

This antibody detects endogenous levels of total Nucleomethylin protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the amino terminus of the human Nucleomethylin protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Nucleomethylin (NML), also known as ribosomal RNA-processing protein 8 (RRP8) and human cerebral protein 1 (Hucep-1), is a nucleolar protein (1,2). NML interacts with the histone de-acetylase protein SirT1 and histone methyl-transferase protein SUV39H1 to form the energy-dependent nucleolar silencing complex (eNoSC) that regulates ribosomal RNA (rRNA) transcription in response to changes in the energy state of the cell (2). As energy levels in the cell decrease due to caloric restriction, eNoSC binds to rRNA genes and represses transcription by SirT1-mediated de-acetylation of histones and SUV39H1-mediated methylation of histone H3 on Lys9. NML binds to di-methylated Lys9 of histone H3 and likely functions in the recruitment and spreading of eNoSC along the rRNA genes (2). NML also contains a methyltransferases-like domain, which binds to S-adenosyl-methionine (SAM) and is required for eNoSC function (2). By limiting the transcription of rRNA genes during caloric restriction, eNoSC promotes the restoration of energy balance and protects cells from energy-dependent apoptosis.

Background References

1. Andersen, J.S. et al. (2005) *Nature* 433, 77-83.
2. Murayama, A. et al. (2008) *Cell* 133, 627-39.

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

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Limited Uses

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