Revision 1

Phospho-NDRG1 (Ser330) Antibody

#3506 Store at -20C

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M	Endogenous	46, 48	Rabbit	#Q92597	10397

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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-NDRG1 (Ser330) Antibody detects endogenous levels of NDRG1 when phosphorylated at Ser330.

Species predicted to react based on 100% sequence homology

Rat, Monkey

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser330 of NDRG1. Antibodies are purified by protein A and peptide affinity chromaography.

Background

N-myc downstream-regulated gene 1 (NDRG1), also termed Cap43, Drg1, RTP/rit42, and Proxy-1, is a member of the NDRG family, which is composed of four members (NDRG1-4) that function in growth, differentiation, and cell survival (1-5). NDRG1 is ubiquitously expressed and highly responsive to a variety of stress signals, including DNA damage (4), hypoxia (5), and elevated levels of nickel and calcium (2). Expression of NDRG1 is elevated in N-myc defective mice and is negatively regulated by N- and c-myc (1,6). During DNA damage, NDRG1 is induced in a p53-dependent fashion and is necessary for p53-mediated apoptosis (4,7). Research studies have shown that NDRG1 may also play a role in cancer progression by promoting differentiation, inhibiting growth, and modulating metastasis and angiogenesis (3,4,6,8,9). Nonsense mutation of the *NDRG1* gene has been shown to cause hereditary motor and sensory neuropathy-Lom (HMSNL), which is supported by studies demonstrating the role of NDRG1 in maintaining myelin sheaths and axonal survival (10,11). NDRG1 is upregulated during mast cell maturation and its deletion leads to attenuated allergic responses (12). Both NDRG1 and NDRG2 are substrates of SGK1, although the precise physiological role of SGK1-mediated phosphorylation is not known (13). NDRG1 is phosphorylated by SGK1 at Thr328, Ser330, Thr346, Thr356, and Thr366. Phosphorylation by SGK1 primes NDRG1 for phosphorylation by GSK-3.

Phospho-NDRG1 (Ser330) Antibody is directed at a site that was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for modification site discovery. Phosphorylation at Ser330 was discovered using an Akt substrate antibody. Please visit PhosphoSitePlus®, CST's modification site knowledgebase, at www.phosphosite.org for more information.

Background References

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3. van Belzen, N. et al. (1997) *Lab Invest* 77, 85-92.
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5. Park, H. et al. (2000) *Biochem Biophys Res Commun* 276, 321-8.
6. Li, J. and Kretzner, L. (2003) *Mol Cell Biochem* 250, 91-105.
7. Stein, S. et al. (2004) *J Biol Chem* 279, 48930-40.
8. Maruyama, Y. et al. (2006) *Cancer Res* 66, 6233-42.
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10. Kalaydjieva, L. et al. (2000) *Am J Hum Genet* 67, 47-58.
11. Okuda, T. et al. (2004) *Mol Cell Biol* 24, 3949-56.
12. Taketomi, Y. et al. (2007) *J Immunol* 178, 7042-53.
13. Murray, J.T. et al. (2004) *Biochem J* 384, 477-88.

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

Cross-Reactivity Key

H: Human **M:** Mouse

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