

#2745 Store at -20C

NEDD8 Antibody


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Applications: WB, IP, IHC-P	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 9	Source: Rabbit	UniProt ID: #Q15843	Entrez-Gene Id: 4738
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Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunohistochemistry (Paraffin)

Dilution

1:1000
1:25
1:200

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 both free and conjugated NEDD8 protein. The antibody does not cross-react with other ubiquitin family members, including ubiquitin, SUMO1, SUMO2, SUMO3 and ISG15.

Species predicted to react based on 100% sequence homology:

Xenopus, Zebrafish, Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids at the amino-terminus of human NEDD8 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Neural precursor cell-expressed developmentally downregulated protein 8 (NEDD8), also known as Rub1 (related to ubiquitin 1) in plants and yeast, is a member of the ubiquitin-like protein family (1,2). The covalent attachment of NEDD8 to target proteins, termed neddylation, is a reversible, multi-step process analogous to ubiquitination. NEDD8 is first synthesized in a precursor form with a carboxy-terminal extension peptide that is removed by either the UCH-L3 or NEDP1/DEN1 hydrolase protein to yield a mature NEDD8 protein (3,4). Mature NEDD8 is then covalently linked to target proteins via the carboxy-terminal glycine residue in a reaction catalyzed by the APP-BP1/Uba3 heterodimer complex and Ubc12 as the E1- and E2-like enzymes, respectively (5). An E3 ligase protein, Roc1/Rbx1, is also required for neddylation of the cullin proteins (6). Protein de-neddylation is catalyzed by a number of enzymes in the cell, including a "ubiquitin-specific" protease USP21, the NEDP1/DEN1 hydrolase and the COP9/signalosome (CSN) (7,8,9). In contrast to the ubiquitin pathway, the NEDD8 modification system acts on only a few substrates and does not appear to target proteins for degradation. Neddylation of cullin proteins activates the SCF (Skp1-Cullin-F-box) E3 ubiquitin ligase complex by promoting complex formation and enhancing the recruitment of the E2-ubiquitin intermediate (10). While NEDD8 modification of VHL is not required for ubiquitination of HIF1- α , it is required for fibronectin matrix assembly (11). Mdm2-dependent neddylation of p53 inhibits its transcriptional activity (12).

Background References

1. Chiba, T. and Tanaka, K. (2004) *Curr. Protein Pept. Sci.* 5, 177-184.
2. Schwartz, D.C. and Hochstrasser, M. (2003) *Trends Biochem. Sci.* 28, 321-328.
3. Wada, H. et al. (1998) *Biochem. Biophys. Res. Commun.* 251, 688-692.
4. Hemelaar, J. et al. (2004) *Mol. Cell Biol.* 24, 84-95.
5. Osaka, F. et al. (1998) *Genes Dev.* 12, 2263-2268.
6. Kamura, T. et al. (1999) *Genes Dev.* 13, 2928-2933.
7. Gong, L. et al. (2000) *J. Biol. Chem.* 275, 14212-14216.
8. Mendoza, H.M. et al. (2003) *J. Biol. Chem.* 278, 25637-25643.
9. Lyapina, S. et al. (2001) *Science* 292, 1382-1385.
10. Kawakami, T. et al. (2001) *EMBO J.* 20, 4003-4012.
11. Stickle, N.H. et al. (2004) *Mol. Cell Biol.* 24, 3251-3261.
12. Xirodimas, D.P. et al. (2004) *Cell* 118, 83-97.

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

WB: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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