

# NEDD8 Blocking Peptide



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**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Description:** This peptide is used to block NEDD8 (19E3) Rabbit mAb #2754 reactivity.

**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- $\alpha$ , it is required for fibronectin matrix assembly (11). Mdm2-dependent neddylation of p53 inhibits its transcriptional activity (12).

**Quality Control:** The quality of the peptide was evaluated by reversed-phase HPLC and by mass spectrometry. The peptide blocks NEDD8 (19E3) Rabbit mAb #2754 by peptide dot blot.

**Notes on Use:** Use as a blocking reagent to evaluate the specificity of antibody reactivity in peptide dot blot protocols. Recommended antibody dilutions can be found on the product data sheet.

#### Background References:

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- (6) Kamura, T. et al. (1999) *Genes Dev.* 13, 2928-2933.
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- (10) Kawakami, T. et al. (2001) *EMBO J.* 20, 4003-4012.
- (11) Stickle, N.H. et al. (2004) *Mol. Cell Biol.* 24, 3251-3261.
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Entrez Gene ID #4738

UniProt ID #Q15843

**Storage:** Supplied in 20 mM potassium phosphate (pH 7.0), 50 mM NaCl, 0.1 mM EDTA, 1 mg/ml BSA and 5% glycerol. 1% DMSO Store at -20°C.

**For product specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

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