

Phospho-NEDD4L (Ser342) (D16D6) Rabbit mAb

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

Applications: W, IP	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 110,135	Source/Isotype: Rabbit IgG	UniProt ID: #Q96PU5	Entrez-Gene Id: 23327
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Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-NEDD4L (Ser342) (D16D6) Rabbit mAb recognizes endogenous levels of NEDD4L protein only when phosphorylated at Ser342.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser342 of human NEDD4L protein.

Background

Neural precursor expressed, developmentally down-regulated protein 4 (NEDD4) was originally identified as a gene that is highly expressed in the early mouse embryonic central nervous system (1). Subsequently, a family of NEDD4-like proteins have been defined that includes seven members in humans (2). NEDD4 and NEDD4-like (NEDD4L) proteins contain multiple functional domains including a calcium-dependent phospholipid and membrane binding domain (C2 domain), two to four protein binding domains (WW domains), and an E3 ubiquitin-protein ligase domain (HECT domain). NEDD4 and NEDD4L have been shown to downregulate both neuronal voltage-gated Na⁺ channels (NaVs) and epithelial Na⁺ channels (ENaCs) in response to increased intracellular Na⁺ concentrations (3,4). The WW domains of NEDD4 bind to PY motifs (amino acid sequence PPXY) found in multiple NaV and ENaC proteins; ubiquitination of these proteins is mediated by the HECT domain of NEDD4 and results in their internalization and removal from the plasma membrane. Research studies have shown that mutation of the PY motifs in ENaC proteins is associated with Liddle's syndrome, an autosomal dominant form of hypertension (5). In addition to targeting sodium channels, NEDD4L has also been shown to negatively regulate TGF-β signaling by targeting Smad2 for degradation (6). Mouse and human NEDD4 are rapidly cleaved by caspase proteins during apoptosis, although the significance of this cleavage is not clear (7). NEDD4L can be phosphorylated at Ser342 and Ser448 by several AGC kinase family members including SGK1, Akt, and PKA (8-11). Phosphorylation at these sites inhibits NEDD4L function as a suppressor of ENaCs and as a regulator of TGF-β signaling through its effects on Smad2/3 binding (8-11).

Background References

1. Kumar, S. et al. (1992) *Biochem Biophys Res Commun* 185, 1155-61.
2. Harvey, K.F. and Kumar, S. (1999) *Trends Cell Biol* 9, 166-9.
3. Dinudom, A. et al. (1998) *Proc Natl Acad Sci USA* 95, 7169-73.
4. Goulet, C.C. et al. (1998) *J Biol Chem* 273, 30012-7.
5. Staub, O. et al. (1996) *EMBO J* 15, 2371-80.
6. Kuratomi, G. et al. (2005) *Biochem J* 386, 461-70.
7. Harvey, K.F. et al. (1998) *J Biol Chem* 273, 13524-30.
8. Gao, S. et al. (2009) *Mol Cell* 36, 457-68.
9. Lee, I.H. et al. (2007) *J Biol Chem* 282, 29866-73.
10. Snyder, P.M. et al. (2004) *J Biol Chem* 279, 45753-8.
11. Debonneville, C. et al. (2001) *EMBO J* 20, 7052-9.

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 **R:** Rat

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