

NEDD8 E1 Activating enzyme

Cat. # NE101

Background:

NEDD8 is an ubiquitin-like protein that is covalently conjugated to selected cellular proteins, including tumor suppressors p53 and VHL and members of cullin ubiquitin E3 ligase family in a manner analogous to ubiquitylation. Conjugation of mature NEDD8 to specific lysine residues on target proteins allows NEDD8 to play a critical regulatory role in cell proliferation and development. The NEDD8 activating E1 enzyme is a heterodimer composed of APPBP1 and UBA3 subunits. The APPBP1/UBA3 enzyme has homology to the N- and C-terminal halves of the ubiquitin E1 enzyme, respectively. The UBA3 subunit contains the catalytic center and activates NEDD8 in an ATP-dependent reaction by forming a high-energy thiolester intermediate. The activated NEDD8 is subsequently transferred to the UbCH12 E2 enzyme, and is then conjugated to specific substrates in the presence of the appropriate E3 ligases.

Alternate names: APPBP1/Uba3

Applications: For use in NEDD8 conjugation reactions and NEDDylation pathway studies

Product Information

Purity: >80%

Molecular Weight: 61kDa and 54kDa

Quantity: 50µg

Physical State: Liquid

Buffer: 50mM Tris Buffer, pH 8.0, 150mM NaCl, 10% glycerol

Source: Human recombinant enzyme purified from *E.coli*

Tag: His₆ and untagged

Activity: 1-100nM is used for the *in vitro* conjugation

Storage: -80° C. Avoid repeated freeze/thaw cycles

References

Gong, L., Yeh E. Identification of the activating and conjugating enzymes of the NEDD8 conjugation pathway". *J. Biol. Chem.* (1999) **274** (17): 12036–42.

Lake M.W., *et al.* Mechanism of ubiquitin activation revealed by the structure of a bacterial MoeB-MoaD complex. (2001) *Nature*. **414**:325-328

Hemelaar J., *et al.* Specific and covalent targeting of conjugating and deconjugating enzymes of ubiquitin-like proteins (2004) *Mol. Cell. Biol.* **24**:84-95

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