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**MATERIAL DATA SHEET**

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**Recombinant Human NEDD8 Biotin****Cat. # UL-820**

Neural Precursor Cell Expressed Developmentally Downregulated Gene 8 (NEDD8), also known as Related to Ubiquitin 1 (Rub1), is a 6-8 kDa member of the Ubiquitin family of proteins. Human pro-NEDD8 is 81 amino acids (aa) in length. Pro-NEDD8 contains one Ubiquitin-like domain (aa 1-65) and a 4-5 aa C-terminal propeptide (1,2). Cleavage of the propeptide exposes a C-terminal glycine residue that is used to generate a glycine-lysine intermolecular bond. Mature human NEDD8 shows 100% aa identity to NEDD8 from mouse, rat, and canine. Human NEDD8 is activated by a distinct NEDD8-activating (E1) enzyme, a heterodimeric complex composed of APPBP1 and UBA3 subunits (3). Activated NEDD8 is subsequently transferred to the UBE2M/Ubc12 or UBE2F NEDD8-conjugating (E2) enzymes (4). Through a process termed neddylation, the ROC1/Rbx1 RING Finger E3 ligase transfers NEDD8 to specific substrates (5). For example, transfer of NEDD8 to the Cullin scaffold activates members of the Cullin-RING Ligase (CRL) family of Ubiquitin ligases (E3) (6-8). CRL-induced ubiquitination is known to regulate proteins that are important for cell cycle progression and cell survival (9,10). Physiologically, NEDD8 plays a critical regulatory role in cell proliferation and dysregulation of the NEDD8 pathway has been associated with several cancer pathologies (11,12).

**Product Information**

<b>Quantity:</b>	50 µg
<b>Source:</b>	<i>E. coli</i> -derived Accession # Q15843
<b>Stock:</b>	Supplied as a solution in HEPES and NaCl.
<b>Purity:</b>	>95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

## Use & Storage

**Use:** Biotin-NEDD8 can be conjugated to substrate proteins via the subsequent actions of a NEDD8-activating (E1) enzyme, a NEDD8-conjugating (E2) enzyme, and a NEDD8 ligase (E3). Biotin-NEDD8 is ideal for the visualization or quantification of thioester formation with avidin-linked reagents. Reaction conditions will need to be optimized for each specific application. We recommend an initial Biotin-NEDD8 concentration of 5-25  $\mu$ M.

**Storage:** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

## Literature

### References:

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***For research use only. Not for use in humans.***