

# UBE2F (NCE2) [untagged]

E2 - NEDD8 Conjugating Enzyme

Alternate Names: NEDD8 conjugating enzyme, MGC18120, NCE2

Cat. No. 62-0025-100

Lot. No. 30120

Quantity: 100 µg

Storage: -70°C

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS



CERTIFICATE OF ANALYSIS

## Background

The enzymes of the NEDDylation pathway play a pivotal role in a number of cellular processes including the indirect regulation and targeting of substrate proteins for proteasomal degradation. Three classes of enzymes are involved in the process of NEDDylation; the ubiquitin-like activating enzyme APP-BP1/Uba3 (E1), the ubiquitin-like conjugating enzymes (E2s) and protein ligases (E3s). UBE2F is a member of the E2 conjugating enzyme family and the human gene was first described by Huang *et al.* (2009). UBE2F acts as a NEDD8 conjugating enzyme both *in vitro* and *in vivo*. UBE2F accepts the ubiquitin-like protein NEDD8 from the Uba3-NAE1 (APP-BP1/Uba3) E1 complex and catalyzes its covalent attachment to other proteins. The specific interaction of UBE2F with the E3 ubiquitin ligase RBX2, but not RBX1, suggests that the RBX2-UBE2F complex NEDDylates specific target proteins such as CUL5, a component of one of the many Cullin Ring Ligases (CRLs) (Huang *et al.*, 2009).

## Reference:

Huang DT, Ayrault O, Hunt HW, Taherbhoy AM, Duda DM, Scott DC, Borg LA, Neale G, Murray PJ, Roussel MF, Schulman BA (2009) E2-RING expansion of the NEDD8 cascade confers specificity to cullin modification. *Mol Cell* 33, 483-95.

## Physical Characteristics

**Species:** human

**Source:** *E. coli* expression

**Quantity:** 100 µg

**Concentration:** 1 mg/ml

**Formulation:** 50 mM HEPES pH 7.5, 150 mM sodium chloride, 2 mM dithiothreitol, 10% glycerol

**Molecular Weight:** ~23 kDa

**Purity:** >95% by InstantBlue™ SDS-PAGE

**Stability/Storage:** 12 months at -70°C; aliquot as required

## Protein Sequence:

GSHMASMTGGQQMGRGSMLTLASKLKRDDG  
LKGSRTAATASDSTRRVSVRDKLLVKEVAEL  
EANLPCTCKVHFPDPNKLHCFQLTVTPDEGYY  
QGGKFQFETEVPDAYNMVPPKVKLTKIWHP  
NITETGEICLSLLREHSIDGTGWAPTRTLKDV  
VWGLNSLFTDLLNFDDPLNIEAAEHHLRDKED  
FRNKVDDYIKRYAR

The residues underlined remain after cleavage and removal of the purification tag.

UBE2F (regular text): Start **bold italics** (amino acid residues 1-185)

Accession number: NP\_542409

## Quality Assurance

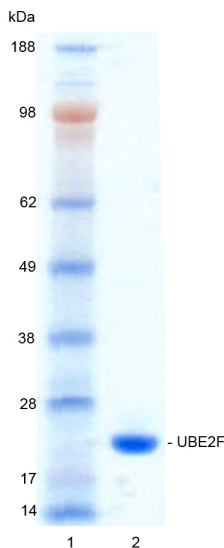
### Purity:

4-12% gradient SDS-PAGE

InstantBlue™ staining

Lane 1: MW markers

Lane 2: 1 µg UBE2F



## Protein Identification:

Confirmed by mass spectrometry.

## E2-NEDD8 Thioester Loading Assay:

The activity of UBE2F was validated by loading E1 (APP-BP1/Uba3) activated NEDD8 onto the active cysteine of the UBE2F E2 enzyme via a transthiolation-reaction. Incubation of the APP-BP1/Uba3 and UBE2F enzymes in the presence of NEDD8 and ATP at 30°C was compared at two time points, T<sub>0</sub> and T<sub>10</sub> minutes. The sensitivity of the NEDD8/UBE2F thioester bond to the reducing agent DTT was confirmed.



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Lot-specific COA version tracker: v1.0.0