SPECIFICATION SHEET
Rev 082738A

Ubiquitin Conjugating Enzyme 12

Human, Recombinant (rHuUbcH12,His6-tagged)

Expressed in *E. coli*
Cat. No. CRP08138
Lot. No. (See product label)

PDB rendering based on 1y8x.
Available structures: 1y8x, 2nvu

PRODUCT INFORMATION

Description: UbcH12 is functional in *in vitro* NEDDylation reactions. It has been shown to form a thioester linkage with NEDD8 in the presence of the NEDD8 activating enzyme complex Uba3/APP-BP1. APP-BP1 binds to the amyloid precursor protein (APP) carboxy terminal domain and is important in conjunction with Uba3 and UbcH12 in driving cells through the S to M checkpoint. It was demonstrated to be the E2 responsible for the NEDDylation of the Cul-1 component of the SCF(β-TRCP) complex which is important as the E3-ligase in the ubiquitinylation of IκBα. NEDDylation of Cul-1 is essential for conjugation and processing of NF-κB p105 by SCF(β-TRCP) following phosphorylation of the complex. A dominant negative form of UbcH12, previously demonstrated to sequester NEDD8 and inhibit its conjugation, inhibits both conjugation and processing of p105, which is alleviated by wild-type UbcH12.

Amino-Acid Sequence: 216*aa.* non-glycosylated

M. W. : Approximately 25 kDa

Recombinant: Expressed in *E. coli*

Purity: >95% by SDS-PAGE and HPLC analyses.

Formulation: Lyophilized from a 0.2μm filtered concentrated (1mg/ml) solution in 1×PBS, 1mM DTT, pH 7.5.

Endotoxin: Less than 1EU/μg of rHuUbcH12 as determined by LAL method.

Reconstitution: We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at <-20°C. Further dilutions should be made in appropriate buffered solutions.

Storage: This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

FOR RESEARCH USE ONLY

GENE INFORMATION

Gene Name: UBE2M
Synonmys: UBC12; hUbc12; UBC-RS2 ubiquitin-conjugating enzyme E2M (UBC12 homolog, yeast); ubiquitin-conjugating enzyme E2M (homologous to yeast UBC12); UBC12_HUMAN; UBE2M;NEDD8-conjugating enzyme Ubc12; EC 6.3.2.-; NEDD8 protein ligase; NEDD8 carrier protein; ubiquitin carrier protein M; ubiquitin-conjugating enzyme E2M (UBC12 homolog, yeast); ubiquitin-conjugating enzyme E2M (homologous to yeast UBC12); ubiquitin-protein ligase M; yeast UBC12 homolog.
mRNA Refseq: NM_003969
Protein Refseq : NP_003960
MIM: 603173
UniProt ID: P61081
Gene ID: 9040
Chromosome Location: 19q13.43
Function: ligase activity;protein binding;ribosomal S6-glutamic acid ligase activity;ubiquitin-protein ligase activity;ubiquitin-protein ligase activity.

REFERENCES

1.Gong L, Yeh ET (1999). Identification of the activating and conjugating enzymes of the NEDD8 conjugation pathway. J. Biol. Chem. 274 (17): 12036–42.
2.Chen Y, McPhie DL, Hirschberg J, Neve RL (2000). The amyloid precursor protein-binding protein APP-BP1 drives the cell cycle through the S-M checkpoint and causes apoptosis in neurons. J. Biol. Chem. 275 (12): 8929–35.

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