

# UBE2W (Ubc16) [6His-tagged]

E2 – Ubiquitin Conjugating Enzyme

Alternate Names: FLJ11011

Cat. No. 62-0085-020  
Lot. No. 30041

Quantity: 20 µg  
Storage: -70°C

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS



CERTIFICATE OF ANALYSIS Page 1 of 1

## Background

The enzymes of the ubiquitylation pathway play a pivotal role in a number of cellular processes including the regulated and targeted proteasomal degradation of substrate proteins. Three classes of enzymes are involved in the process of ubiquitylation; activating enzymes (E1s), conjugating enzymes (E2s) and protein ligases (E3s). UBE2W is a member of the E2 conjugating enzyme family and cloning of the human gene was first described by Yin *et al.* (2006). UBE2W comprises 7 exons and there are two Nuclear Localisation Signals (NLS) located in the c-terminus of the UBC domain (Yin *et al.*, 2006). Interaction of UBE2W with the human heteromeric RING E3 BRCA1-BARD1 has been demonstrated using yeast two-hybrid screening. UBE2W binds directly to the RING motif of BRCA1 causing autoubiquitylation of BRCA1-BARD1 and monoubiquitylation of BRCA1 alone *in vitro* (Christensen *et al.*, 2007). UBE2W also interacts with UBE1 and the E3 ligase FANCL to monoubiquitylate FANCD2 *in vitro* (Alpi *et al.*, 2008)

## References:

Alpi AF, Pace PE, Babu MM, Patel KJ (2008) Mechanistic insight into site-restricted monoubiquitination of FANCD2 by Ube2t, FANCL, and FANCI. *Mol Cell* **32**, 767-77.

Christensen DE, Brzovic PS, Klevit RE (2007) E2-BRCA1 RING interactions dictate synthesis of mono- or specific polyubiquitin chain linkages. *Nat Struct Mol Biol* **14**, 941-8.

Yin G, Ji C, Wu T, Shen Z, Xu X, Xie Y, Mao Y (2006) Cloning, characterization and subcellular localization of a gene encoding a human Ubiquitin-conjugating enzyme (E2) homologous to the Arabidopsis thaliana UBC-16 gene product. *Front Biosci* **11**, 1500-7.

## Physical Characteristics

**Species:** human

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

**Quantity:** 20 µg

**Concentration:** 1 mg/ml

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

**Molecular Weight:** ~22.2 kDa

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

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

## Protein Sequence:

**M G S S H H H H H S S G L V P R G S H M A S M T G**  
GQQMGRGSMASMQTTGRRVEVWFPKRLQKEL  
LALQNDPPPGMTLNEKSVQNSITQWIVDMEGA  
PGLTYEGEKFQLLFKFSRRYPFDSPQVMFT  
GENIPVHPHVYSNGHICLSILTEDWSPALS  
VQSVCLSIISMLSSCKEKRRPPDNSFYVRTC  
NKNPKKTKWWYHDDTC

Tag (**bold text**): N-terminal His

Protease cleavage site: Thrombin (LVPR**▼**GS)

UBE2W (regular text): Start **bold italics** (amino acid residues 1-162)

Accession number: NP\_001001481.1

## Quality Assurance

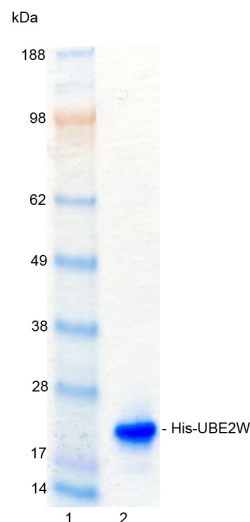
### Purity:

4-12% gradient SDS-PAGE

InstantBlue™ staining

Lane 1: MW markers

Lane 2: 1 µg His-UBE2W



### Protein Identification:

Confirmed by mass spectrometry.

### E2-Ubiquitin Thioester Loading Assay:

The activity of His-UBE2W was validated by loading E1 UBE1 activated ubiquitin onto the active cysteine of the His-UBE2W E2 enzyme via a transthioesterification reaction. Incubation of the UBE1 and His-UBE2W enzymes in the presence of ubiquitin and ATP at 30°C was compared at two time points, T<sub>0</sub> and T<sub>10</sub> minutes. Sensitivity of the ubiquitin/His-UBE2W thioester bond to the reducing agent DTT was confirmed.



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Lot-specific COA version tracker: v1.0.0