

# [C<sup>85</sup>A]Ubch5b (human), (recombinant) (His- tag)

A number of E2s in *Saccharomyces cerevisiae* and their homologues have been identified. One such family of E2s is the UBC4/5, characterised as essential for the degradation of short-lived, regulatory and abnormal proteins. Protein levels of *S. cerevisiae* UbC4/5 are up-regulated in response to stress, and their loss results in severe effects on cellular functions.

A human gene product that is 79% identical to *S. cerevisiae* UBC4/5 in amino-acid sequence was identified as Ubch5a. In addition, two other human members of this highly conserved E2 class were also cloned and designated as Ubch5b and Ubch5c, having 88% and 89% identity to Ubch5a, respectively. Members of the Ubch5a/b/c are the most active class of E2s in cell extracts. The importance of this enzyme class is underscored by the critical role of UBC4/5 in *S. cerevisiae*. Ubch5a stimulates the conjugation of ubiquitin to the tumour-repressor p53 in the presence of E6-AP and E6. Moreover, Ubch5 family is implicated in *c-fos* recognition, the modulation of which is controlled by the ubiquitin-proteasome pathway. Ubch5b and Ubch5c are associated with the signal-induced conjugation and subsequent degradation of IκBα in the presence of the SCF complexes. Ubch5c also catalyses the ubiquitination leading to the processing of p105 precursor to form p50, a subunit of the heterodimeric transcription factor NF-κB. The range and diversity of substrates and E3s with which this class of E2 enzymes interact, suggest their complex roles in cellular functions require to be studied further.

**Manuals, SDS & CofA**

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## Handling & Storage

**Use/Stability** Enzyme is stable to multiple freeze/thaw cycles.

**Long Term Storage** -80°C

**Shipping** Dry Ice

**Regulatory Status** RUO - Research Use Only

## Product Details

**Application Notes** Negative control for ubiquitin conjugating enzyme Ubch5b (Prod. No. BML-UW9060). The [C85A] mutation completely abolishes the ability of the enzyme to form a thiol ester.

**Biological Activity** The His<sub>6</sub>-tagged fusion proteins of Ubch5a, Ubch5b and Ubch5c all charge and support ubiquitylation *in vitro*. Unlike their GST-tagged counterparts, the His<sub>6</sub>-tagged Ubch5 family members all appear to form thiol ester conjugates with ubiquitin at a similar rate under similar conditions. The [C<sup>85</sup>A] mutation completely abolishes the ability of the enzyme to form a thiol ester and thereby acts as an excellent negative control.

**Formulation** Liquid. In 20mM TRIS-HCl, pH7.5, containing 0.5mM DTT.

**MW** ~18kDa

**Source** Produced in *E. coli*.

**UniProt ID** P62837

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