[C^{85}A]UbcH5b (human), (recombinant) (His-tag)

A number of E2s in *Saccharomyces cerevisiaem* 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 IkBα 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-kB. 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_6-tagged fusion proteins of UbcH5a, UbcH5b and UbcH5c all charge and support ubiquitinylation *in vitro.* Unlike their GST-tagged counterparts, the His_6-tagged UbcH5 family members all appear to form thiol ester conjugates with ubiquitin at a similar rate under similar conditions. The [$C^{85}A$] 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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