UbcH6 (human), (recombinant) (His-tag)

Ubiquitinylation of proteins constitutes an important cellular mechanism for targeting short-lived proteins for degradation by the 26S proteasome. Three classes of enzymes are involved in the conjugation of ubiquitin to proteins. E1, the ubiquitin activating enzyme, activates ubiquitin through the ATP-dependent formation of a high-energy thiol ester bond between the carboxyl terminus of ubiquitin and the active-site cysteine within E1. This E1-activated ubiquitin is transferred to a cysteine residue of an E2, or ubiquitin-conjugating enzyme (UbC). E2 enzymes, either by themselves or in conjunction with E3 enzymes (ubiquitin ligases), then transfer ubiquitin to target proteins forming stable isopeptide bonds resulting in multi-ubiquitin chain formation. It is the diverse combinations of E2-E3 complexes that are thought to define substrate specificity.

UbcH6 is a integral membrane protein localized to the endoplasmic reticulum (ER), and possibly the nuclear envelope. Sequence comparison reveals that UbcH6 is a member of an evolutionally conserved subfamily of E2s that includes UbcH5 and the *S. cerevisiae* derived Ubc4. However, UbcH6 appears to be unique among these E2s since it contains an amino-terminal extension of approximately 40 amino acids, the functional significance of which extension is presently unknown. Confusingly, UbcH6 it is not related to the *S. cerevisiae* derived Ubc6. Regardless of amino acid sequence homologies, it appears that UbcH6 may be structurally more similar to UbcH5a than UbcH5a is itself to either UbcH5b or UbcH5c. Despite these sequence similarities, UbcH6 does not efficiently substitute for UbcH5 or *S. cerevisiae* derived Ubc4 in E6-AP-dependent protein ubiquitinylation or many other HECT-domain mediated events.

UbcH6 may be involved in the degradation of unprocessed protein precursors that are not translocated through the rough ER, turnover of membrane proteins such as cytochrome P450 2E14, and the control of transcription factors.

Ordering Information

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BML-UW8710-0100	100µg

Manuals, SDS & CofA

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Handling & Storage

Use/Stability	While not recommended, it appears that the 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	Can be used for *in vitro* ubiquitinylation reactions.
Formulation	Liquid. In PBS, pH 7.2, containing 1mM DTT and 10% glycerol.
MW	~27kDa (observed)
Purity	≥95% (SDS-PAGE)
Source	Produced in *E. coli.*
UniProt ID	P51965

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