

MATERIAL DATA SHEET**His₆-Ubiquitin E1 Enzyme (UBE1), *human recombinant*
Cat. # E-304**

Ubiquitin Activating Enzyme (UBE1), also known as Ubiquitin like Modifier Activating Enzyme 1 (UBA1), is a 1058 amino acid (aa) canonical member of the Ubiquitin Activating (E1) enzyme family of proteins with a predicted molecular weight of 118 kDa. It is ubiquitously expressed and highly conserved; mouse and rat UBE1 share 95% and 96% aa sequence identity with the human UBE1 protein, respectively. UBE1 is found in the cytoplasm and nucleus, and contains a conserved active site cysteine residue and ATP binding site common to E1 enzymes. UBE1 is responsible for the first step in ubiquitin- protein isopeptide bond formation. Ubiquitin is activated by UBE1 and thereafter linked to the side chain of a cysteine residue in UBE 1, Cys632 in humans, yielding a ubiquitin-UBE1 conjugate via a thioester bond. The activated ubiquitin is then transferred to a lysine residue on the target protein via the ubiquitin conjugating- ubiquitin ligase enzyme cascade. UBE1 is required for cell cycle progression and has been linked to cellular responses to DNA damage such as nucleotide excision repair. Mutations in UBE1 are associated with X-linked lethal infantile spinal muscular atrophy. UBE1 is a critical component for the initiation of *in vitro* ubiquitin conjugation reactions. This protein has an N-terminal His6 tag.

Product Information

Quantity:	50 µg
Stock:	X mg/ml (X µM) in 50 mM HEPES pH 8.0, 50 mM NaCl, 1 mM TCEP
Purity:	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain
MW:	121 kDa

Use & Storage

Use:	Recombinant Human His6 Ubiquitin Activating Enzyme (UBE1) is a member of the Ubiquitin activating (E1) enzyme family that is required for the first step of the enzymatic cascade that subsequently utilizes a ubiquitin conjugating (E2) enzyme and a Ubiquitin ligase (E3) to conjugate ubiquitin to substrate proteins. Reaction conditions will need to be optimized for each specific application. We recommend an initial UBE1 concentration of 50-200 nM.
Storage:	Store at -80°C. Avoid multiple freeze/thaw cycles.

Literature

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