

MATERIAL DATA SHEET**GST-Ubiquitin E1 Enzyme (UBE1), *S.cer. recombinant***
Cat. # E-300

Ubiquitin-activating Enzyme (UBE1), also known as Ubiquitin-like Modifier Activating Enzyme 1 (UBA1), is a 1024 amino acid (aa) canonical member of the Ubiquitin-activating (E1) enzyme family of proteins with a predicted molecular weight of 114 kDa. Human and mouse UBE1 share 52% and 53% aa sequence identity with the yeast 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 UBE1, Cys600 in *S. cerevisiae*, 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 GST tag.

Product Information

Quantity:	50 µg
Stock:	0.71 mg/ml (5 µM) in 50mM HEPES pH 8.0, 100 mM NaCl, 10% Glycerol, 1 mM TCEP
Purity:	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain
MW:	141 kDa

Use & Storage

Use:	Recombinant yeast GST-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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