Recombinant Human UbcH5b/UBE2D2

Catalog Number: E2-622

DESCRIPTION

Source	*E. coli*-derived human UbcH5b/UBE2D2 protein Met1 - Met147 Accession # P62837.1
Predicted Molecular Mass	17 kDa

SPECIFICATIONS

Activity	Recombinant Human UbcH5b/UBE2D2 is a member of the Ubiquitin-conjugating (E2) enzyme family that receives Ubiquitin from a Ubiquitin-activating (E1) enzyme and subsequently interacts with 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 Recombinant Human UbcH5b/UBE2D2 concentration of 0.1-1 µM.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.
Formulation	Supplied as a solution in HEPES, NaCl, TCEP and Glycerol. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, -70 °C as supplied. • 3 months, -70 °C under sterile conditions after opening.

BACKGROUND

Ubiquitin-conjugating Enzyme H5b (UbcH5b), also known as Ubiquitin-conjugating Enzyme E2D 2 (UBE2D2), is a widely expressed member of the Ubiquitin-conjugating (E2) enzyme family (1). The protein has a predicted molecular weight of 16.5 kDa. UbcH5b/UBE2D2 localizes to both the nucleus and the cytoplasm (2). The human protein shares 100% and 92% amino acid sequence identity with the mouse and rat orthologs, respectively. This enzyme has an E2 catalytic core domain that contains an active site cysteine residue that is required for the formation of a thioester bond with Ubiquitin (3). UbcH5b/UBE2D2 is capable of mediating the formation of Ubiquitin chains linked through Lys11, Lys48, or Lys63 (4). Working with the SCF(Fbxw2) and MDM2/HDM2 Ubiquitin ligases (E3s), UbcH5b/UBE2D2 mediates the ubiquitination and degradation of the transcription factors GCM1 and p53, respectively (5-7). Along with UBE2N/Ubc13, UbcH5b/UBE2D2 may have a role in the endocytosis and endolysosomal degradation of MHC class I molecules (8). Non-proteolytic ubiquitination of TRIM5-α by UbcH5b/UBE2D2 has been reported to block HIV reverse transcription (9). Pathologically, UBE2D family members may be critical targets of cadmium during cadmium-induced renal toxicity (10). Additionally, overexpression of UbcH5b/UBE2D2 has been linked to inflammatory bowel disease (11).

References:

1. Jensen, J.P. *et al.* (1995) J. Biol. Chem. **270**:30408.
2. Umebayashi, K. *et al.* (2008) Mol. Biol. Cell **19**:3454.
3. Hershko, A. *et al.* (1983) J. Biol. Chem. **258**:8206.
4. Ordureau, A. *et al.* (2008) Biochem. J. **409**:43.
5. Chiang, M.H. *et al.* (2008) Biol. Reprod. **79**:914.
6. Saville, M.K. *et al.* (2004) J. Biol. Chem. **279**:42169.
7. Iyappan, S. *et al.* (2010) J. Biol. Chem. **285**:33065.
8. Duncan, L.M. *et al.* (2006) EMBO J. **25**:1635.
9. Yamauchi, K. *et al.* (2008) FEBS J. **275**:1540.
10. Tokumoto, M. *et al.* (2011) J. Toxicol. Sci. **36**:191.
11. Hetzenecker, A.M. *et al.* (2012) Digestion **86**:34.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475