

PRODUCT DATA SHEET



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Product name(s):	mature-UBL5 (His₆-tagged)
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Product code:	UW9525	Batch number:	Temp	Expiry date:	12 months from receipt
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Product information:
<p>UBL5 was initially identified in a screen for highly expressed genes in human iris¹. The gene encodes a protein of 73 amino acids with a molecular weight of 8.5 kDa. Orthologs of UBL5 occur in every eukaryotic genome characterized to date, which suggests an important function for UBL5. The amino acid sequence of UBL5 is identical to that of Beacon², a protein reported to be involved in feeding behaviour and development of obesity and type 2 diabetes in the Israeli sand rat <i>Psammomys obesus</i>, and it may also interact with the cyclin-like kinase CLK4².</p> <p>The yeast ortholog of UBL5, HUB1, has recently been demonstrated to be an essential gene, whose loss results in cell cycle defects, inefficient pre-mRNA splicing, and incorrect sub-cellular targeting³. HUB1 has been reported to have ubiquitin-like modifier activity with high molecular weight adducts being formed <i>in vivo</i>, however, the structure of these adducts is not known, and they could be either covalent or non-covalent in nature.</p> <p>Based on sequence homology and structure prediction algorithms it has been demonstrated that the protein structure of UBL5 is very similar to that of ubiquitin despite the low, approximately 25%, residue similarity⁴. Unlike ubiquitin and all other ubiquitin-like modifiers, UBL5 and its yeast ortholog HUB1 both contain a C-terminal di-tyrosine motif followed by a single variable residue instead of the characteristic di-glycine found in all other ubiquitin-like modifiers and required for ubiquitin-like modifiers to conjugate to their target proteins. It is suggested that C-terminal proteolysis may prove to be an activating step for conjugation.</p>

Product data:
UW9525 is a recombinant protein produced in <i>E. coli</i> corresponding to the human sequence encompassing an N-terminal His ₆ -tag within a leader sequence. The molecular weight of this material is 13306Da. The purity assessed by SDS-PAGE and Coomassie staining is >95%.

Storage and use:
Material is supplied at a concentration of 1.0mg/mL in 20mM HEPES, pH8.0, 150mM NaCl, 1mM DTT. For long term storage store at -80°C. Avoid multiple freeze/thaw cycles. After initial defrost, aliquot into individual tubes and refreeze at -80°C.

References:
<ol style="list-style-type: none">1. Friedmann, J.S., Koop, B.F., Raymond, V. and Walter, M.A. Isolation of a ubiquitin-like (UBL5) gene from a screen identifying highly expressed and conserved iris genes. <i>Genomics</i>, 71, 252-255 (2001).2. Collier, G.R., McMillan, J.S., Windmill, K., Walder, K., Tenne-Brown, J., de Silva, A., Trevaskis, J., Jones, S., Morton, G.J. and Lee, S. Beacon – a novel gene involved in the regulation of energy balance. <i>Diabetes</i>, 49, 1766-1771 (2000).3. Wilkinson, C.R., Dittmar, G.A., Ohi, M.D., Uetz, P., Jones, N. and Finley, D. Ubiquitin-like protein Hub1 is required for pre-mRNA splicing and localization of an essential splicing factor in fission yeast. <i>Curr. Biol.</i>, 14, 2283-2288 (2004).4. McNally, T., Huang, Q., Janis, R.S., Liu, Z., Olejniczak, E.T. and Reilly, R.M. Structural analysis of UBL5, a novel ubiquitin-like modifier. <i>Prot. Sci.</i>, 12, 1562-1566 (2003).