

UBE2Q1 (NICE-5) [GST-tagged]

E2 – Ubiquitin Conjugating Enzyme

Alternate Names: UBE2Q1, NICES, PRO3094, GTAP

Cat. No. 62-0049-020
Lot. No. 1402

Quantity: 20 µg
Storage: -70°C



FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS

CERTIFICATE OF ANALYSIS Page 1 of 2

Background

The enzymes of the ubiquitylation pathway play a pivotal role in a number of cellular processes including regulated and targeted proteosomal degradation of substrate proteins. Three classes of enzymes are involved in the process of ubiquitylation; activating enzymes (E1s), conjugating enzymes (E2s) and protein ligases (E3s). UBE2Q1 is a member of the E2 conjugating enzyme family. Cloning of human UBE2Q1 was first described by Marenholz *et al.* (2001). UBE2Q1 shares 50-75% sequence identity to its homologues in, *Mus musculus*, *Drosophila*, *C. elegans* and *Xenopus*. Murine UBE2Q1 has a conserved sequence for ubiquitin binding shared by all the ubiquitin-conjugating enzymes and its NH₂-terminal domain appears critical for the binding and internalization of cell surface galactosyltransferase 1 (GalT1) in embryonic stem cells. UBE2Q1 regulates GalT1-associated laminin-dependent embryonic cell adhesion and the formation of embryoid bodies (Wassler *et al.*, 2008).

References:

Marenholz I, Zirra M, Fischer DF, Backendorf C, Ziegler A, Mischke D (2001) Identification of human epidermal differentiation complex (EDC)-encoded genes by subtractive hybridization of entire YACs to a gridded keratinocyte cDNA library. *Genome Res* **11**, 341-55.

Wassler MJ, Shur BD, Zhou W, Geng YJ (2008) Characterization of a novel ubiquitin-conjugating enzyme that regulates beta1,4-galactosyltransferase-1 in embryonic stem cells. *Stem Cells* **26**, 2006-18.

Physical Characteristics

Species: human

Source: *E. coli* expression

Quantity: 20 µg

Concentration: 1 mg/ml

Formulation: 50 mM HEPES pH 7.5, 150 mM sodium chloride, 2 mM dithiothreitol, 10% glycerol

Molecular Weight: ~73 kDa

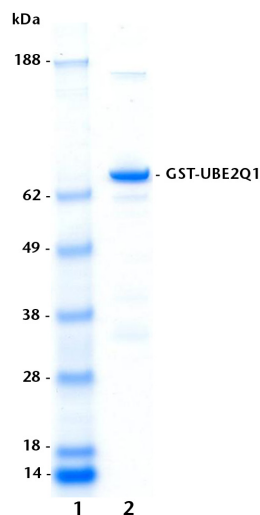
Purity: >80% by InstantBlue™ SDS-PAGE

Stability/Storage: 12 months at -70°C; aliquot as required

Protein Sequence: Please see page 2

Quality Assurance

Purity:
4-12% gradient SDS-PAGE
InstantBlue™ staining
lane 1: MW markers
lane 2: 1 µg GST-UBE2Q1



Protein Identification:
Confirmed by mass spectrometry.

E2-Ubiquitin Thioester Loading Assay:

The activity of GST-UBE2Q1 was validated by loading E1 UBE1 activated ubiquitin onto the active cysteine of the GST-UBE2Q1 E2 enzyme via a transthioester reaction. Incubation of the UBE1 and GST-UBE2Q1 enzymes in the presence of ubiquitin and ATP at 30°C was compared at two time points, T₀ and T₁₀ minutes. Sensitivity of the ubiquitin/GST-UBE2Q1 thioester bond to the reducing agent DTT was confirmed.



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Lot-specific COA version tracker: v1.0.0

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CERTIFICATE OF ANALYSIS Page 2 of 2

Physical Characteristics

Continued from page 1

Protein Sequence:

MSPILGYWKIKGLVQPTRLLEYLEEKYEHH
LYERDEGDKWRNKKFELGLEFPNLPYY
IDGDVKLTQSMARIYIADKHNMLGGCPKER
AEISMLEGAVLDIRYGVSRAYSKDFETLKVD
FLSKLPEMLKMFEDRLCHKTYLNGDH
VTHPDFMLYDALDVVLYMDPMCLDAFP
KLVCFKKRIEAIQIDKYLKSSKYIAWPLQG
WQATFGGGDHPKSDLEVLFGPLGSPE
FQQPQPQQQQPGPGQQLGGQGAAPGAG
GGPGGGPGPGCLRRELKLESIFHRGHER
FRIASACDELSCFLLAGAGGAGAGAAPGPHLP
PRGSVPGDPVRIHCNITESYPVPPPIWSVESD
DPNLAAVLERLVDIKKGNLTLQLHLKRIISDLCK
LYNLPQHDPVEMLDQPLPAEQCTQEDVSSD
EDEEMPEDTEDLDHYEMKEEPAEGKKSDD
GIGKENLAILEKIKKNQRQDYLNQAVSGSVQAT
DRLMKELRDIYRSQSFKGGNYAVELVNDSLYD
WNVKLLKVDQDSALHNDLQILKEGADGADG
NFSFKDNFPDPPFVRVSPVLSGGYVLGGGAIC
MELLTKQGWSSAYSIESVIMQISATLVKGGARVQF
GANKSQYSLTRAQSYKSLVQIHEKNGWYTP
PKEDG

Tag (**bold text**): N-terminal glutathione-S-transferase (GST)

Protease cleavage site: PreScission™ (LEVLFG▼GP)

UBE2Q1 (regular text): Start **bold italics** (amino acid residues 2-422)

Accession number: NP_060052



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