

## Product datasheet for **RC238348**

### CDT2 (DTL) (NM\_001286229) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	CDT2 (DTL) (NM_001286229) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	DTL
Synonyms:	CDT2; DCAF2; L2DTL; RAMP
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>RC238348 representing NM\_001286229  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGGATATTCAAGTCTGATTTTGGATTCCACTGGCTCTACTTTATTTGCTAATTGCACAGACGATAACA  
 TCTACATGTTAATATGACTGGGTTGAAGACTTCTCCAGTGGCTATTTTCAATGGACACCAGAACTCTAC  
 CTTTTATGTAATAATCCAGCCTTAGTCCAGATGACCAGTTTTTATGTCAGTGGCTCAAGTGATGAAGCTGCC  
 TACATATGGAAGGTCTCCACACCCTGGCAACCTCTACTGTGCTCCTGGGTATTCTCAAGAGGTACCGT  
 CTGTGTGCTGGTCCATCTGACTTCACAAAGATTGCTACCTGTTCTGATGACAAACACTAAAAATCTG  
 GCGCTTGAATAGAGGCTTAGAGGAGAAACCAGGAGGTGATAAACTTTCCACGGTGGGTTGGGCTCTCAG  
 AAGAAAAAGAGTCAAGACCTGGCCTAGTAACAGTAACGAGTAGCCAGAGTACTCCTGCCAAGCCCCCA  
 GGGTAAAGTGAATCCATCCAATTTCCCGTCCATCCGAGCTTGTGCCCAAGCTGTGCTGGAGACCT  
 CCCTCTTCTTCAAATACTCCTACGTTCTCTATTAACCTCTCCTGCCAAGCCGGTCTCCCATCAAC  
 AGAAGAGGCTCTGTCTCCTCCGTCTCTCCAAGCCACCTTCATCTTTCAAGATGTGATTAGAACTGGG  
 TGACCCGAACACCTTCTCATCACCCATCACTCCACCTGCTTCGGAGACCAAGATCATGTCTCCGAG  
 AAAAGCCCTTATTCCTGTGAGCCAGAAGTCATCCAAGCAGAGGCTTGTCTGAGCTAGAAATAGAGTA  
 AAGAGGAGGCTAGACTCAAGCTGTCTGGAGAGTGTGAAACAAAAGTGTGTGAAGATTGTAAGTGTGTA  
 CTGAGCTTGATGGCCAAGTTGAAAATCTTCATTTGGATCTGTGCTGCCTTGTGTTAACCAGGAAGACCT  
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 CCGTCTCTATCAGTCCGTATGCTTCAGAAAGCTGTGGAACGCTACCTCTTCTTTGAGACCTTGTGGAG  
 AAGGCTCTGAAAATGGTAGGCAAGAGATAAGTTCCCGAGAGAATAAAAACTGGTTGTTGGCCATGGCAGC  
 CAACCGGAAGGCTGAGAATCCATCTCCAGAAAGTCCGTATCCAGACACCAATTCAGGAGACAGAGC  
 GGAAAGACATTGCCAAGCCCGGTACCATCACGCCAGCTCCATGAGGAAAATCTGCACATACTTCCATA  
 GAAAGTCCAGGAGGACTTCTGTGGTCTGAACACTCAACAGAATTA

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC238348 representing NM\_001286229  
 Red=Cloning site Green=Tags(s)

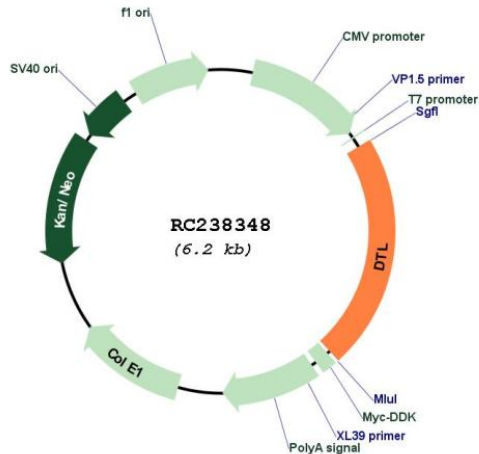
MGYSSLILDSTGSTL FANCTDDNIYMFNMTGLKTSVAIFNGHQNSTFYVKSSLSPDDQFLVSGSSDEAA  
 YIWKVSTPWQPPTVLLGHSQEVT SVCWCPSDFTKIATCSDNTLKIWRLNRGLEEKPGGDKLSTVGWASQ  
 KKKESRPLVTVTSSQSTPAKAPRVKCNPSNSSPSSAACAPSCAGDLPLPSNTPTFSIKTSKARSPIN  
 RRGSVSSVSPKPPSSFKMSIRNWVTRTPSSPPIPPASETKIMSPRKALIPVSQKSSQAEACSESRNRV  
 KRRLDSSCLESVKQKCVKSCNCVTELDGQVENLHLDLCLLAGNQEDLSKDSLGPTKSSKIEGAGTISEP  
 PSPISPYASESCGTLPLPLRPCGEGSEMVGKENS SPENKNWLLAMAARKAENSPRSPSSQTPNSRRQS  
 GKTLPSPVITIPSSMRKICTYFHRKSQEDFCGPEHSTEL

**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**

**Plasmid Map:**


**ACCN:** NM\_001286229

**ORF Size:** 1377 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [NM\\_001286229.1](#), [NP\\_001273158.1](#)

**RefSeq Size:** 4381 bp

**RefSeq ORF:** 1380 bp

**Locus ID:** 51514

**UniProt ID:** [Q9NZJ0](#)

**Cytogenetics:** 1q32.3

**Protein Families:** Druggable Genome

**MW:** 49.8 kDa

**Gene Summary:** Substrate-specific adapter of a DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complex required for cell cycle control, DNA damage response and translesion DNA synthesis. The DCX(DTL) complex, also named CRL4(CDT2) complex, mediates the polyubiquitination and subsequent degradation of CDT1, CDKN1A/p21(CIP1), FBH1, KMT5A and SDE2 (PubMed:16861906, PubMed:16949367, PubMed:16964240, PubMed:17085480, PubMed:18703516, PubMed:18794347, PubMed:18794348, PubMed:19332548, PubMed:20129063, PubMed:23478441, PubMed:23478445, PubMed:23677613, PubMed:27906959). CDT1 degradation in response to DNA damage is necessary to ensure proper cell cycle regulation of DNA replication (PubMed:16861906, PubMed:16949367, PubMed:17085480). CDKN1A/p21(CIP1) degradation during S phase or following UV irradiation is essential to control replication licensing (PubMed:18794348, PubMed:19332548). KMT5A degradation is also important for a proper regulation of mechanisms such as TGF-beta signaling, cell cycle progression, DNA repair and cell migration (PubMed:23478445). Most substrates require their interaction with PCNA for their polyubiquitination: substrates interact with PCNA via their PIP-box, and those containing the 'K+4' motif in the PIP box, recruit the DCX(DTL) complex, leading to their degradation. In undamaged proliferating cells, the DCX(DTL) complex also promotes the 'Lys-164' monoubiquitination of PCNA, thereby being involved in PCNA-dependent translesion DNA synthesis (PubMed:20129063, PubMed:23478441, PubMed:23478445, PubMed:23677613). The DDB1-CUL4A-DTL E3 ligase complex regulates the circadian clock function by mediating the ubiquitination and degradation of CRY1 (PubMed:26431207).[UniProtKB/Swiss-Prot Function]