

## Product datasheet for **SC114271**

### CDT2 (DTL) (NM\_016448) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	CDT2 (DTL) (NM_016448) Human Untagged Clone
Tag:	Tag Free
Symbol:	CDT2
Synonyms:	CDT2; DCAF2; L2DTL; RAMP
Mammalian Cell Selection:	None
Vector:	<u><a href="#">pCMV6-XL5</a></u>
E. coli Selection:	Ampicillin (100 ug/mL)



[View online »](#)

**Fully Sequenced ORF:** >OriGene ORF within SC114271 sequence for NM\_016448 edited (data generated by NextGen Sequencing)

```

ATGCTCTTCAATTGCGGTGCTCCGCCAGCCCCAGCTTGGCGTCCTGAGAAATGGATGGTCT
TCACAATACCCTCTTCAATCCCTTCTGACTGGTTATCAGTGCAGTGGTAATGATGAACAC
ACTTCTTATGGAGAAACAGGAGTCCCAGTTCCTCCTTTTGGATGTACCTTCTCTTCTGCT
CCCAATATGGAACATGTACTAGCAGTTGCCAATGAAGAAGGCTTTGTTTCGATTGTATAAC
ACAGAATCACAAAGTTTTCAGAAAGAAGTCTTCAAAGAATGGATGGCTCACTGGAATGCC
GTCTTTGACCTGGCTGGGTTCCCTGGTGAACCTAAACTTGTACAGCAGCAGGTGATCAA
ACAGCCAAATTTTGGGACGTAAGCTGGTGGAGCTGATTGGAACATGCAAAGGTGATCAA
TGCAGCCTCAAGTCAGTTGCCTTTTCTAAGTTTGGAAAGCTGTATTCTGTACGGGTGGA
AGAGATGGCAACATTATNNNNNNGGATACCAGGTGCAACAAAAAAGATGGGTTTTATAGG
CAAGTGAATCAAATCAGTGGAGCTCACAAATACCTCAGACAAGCAAACCCCTTCAAACCC
AAGAAGAAACAGAATTCAAAAGGACTTGCTCCTTCTGTGGATTTCCAGCAAAGTGTACT
GTGGTCTCTTCAAGACGAGAATACCTTAGTCTCAGCAGGAGCTGTGGATGGGATAATC
AAAGTATGGGATTTACGTAAGAATTATACTGCTTATCGACAAGAACCCATAGCATCCAAG
TCTTTCCCTGTACCCAGGTAGCAGCACTCGAAAACCTGGATATTCAAGTCTGATTTGGAT
TCCACTGGCTCTACTTTATTTGTAATTGCACAGACGATAACATCTACATGTTTAAATATG
ACTGGGTTGAAGACTTCTCCAGTGGCTATTTTCAATGGACACCAGAACTCTACCTTTTAT
GTAAAAATCCAGCCTTAGTCCAGATGACCAGTTTTTGTAGTCAAGTGGCTCAAGTGTGAAGCT
GCCTACATATGGAAGGTCTCCACACCCTGGCAACCTCCTACTGTGCTCCTGGGTCATTCT
CAAGAGGTCACGTCTGTGTGCTGGTGTCCATCTGACTTCACAAAGATTGCTACCTGTTCT
GATGACAATACTAAAAATCTGGCGCTTGAATAGAGGCTTAGAGGAGAAACAGGAGGT
GATAAACTTTCCACGGTGGGTTGGGCTCTCAGAAGAAAAAAGAGTCAAGACCTGGCCTA
GTAAACAGTAACGAGTAGCCAGAGTACTCCTGCCAAAGCCCCAGGGTAAAGTGCAATCCA
TCCAATCTTCCCGTCAATCCGAGCTTGTGCCCAAGCTGTGCTGGAGACCTCCCTCTT
CCTTCAAATACTCCTACGTTCTCTATTAACCTCTCCTGCCAAGGCCGGTCTCCCATC
AACAGAAGAGGCTCTGTCTCCTCCGTCTCTCCAAGCCACCTTCATCTTTCAAGATGTGCG
ATTAGAACTGGGTGACCCGAACACCTTCCATCACCACCCATCACTCCACCTGCTTCCG
GAGACCAAGATCATGTCTCCGAGAAAAGCCCTTATTCTGTGAGCCAGAAGTCATCCCAA
GCAGAGGCTTGTCTGAGTCTAGAAATAGAGTAAAGAGGAGGCTAGACTCAAGCTGTCTG
GAGAGTGTGAAACAAAAGTGTGTGAAGATTGTAAGTGTGACTGAGCTTGATGGCCAA
GTTGAAAATCTTCAATTTGGATCTGTGCTGCCTTGTGGTAACCAGGAAGACCTTAGTAAG
GACTCTCTAGGTCTACCAAATCAAGCAAAATTGAAGGAGCTGGTACCAGTATCTCAGAG
CCTCCGCTCCTATCAGTCCGTATGCTTCCAGAAAGCTGTGGAACGCTACCTTCTCCTTTG
AGACCTTGTGGAGAAGGGTCTGAAATGGTAGGCAAGAGAATAGTTCCCCAGAGAATAAA
AACTGGTTGTTGGCCATGGCAGCCAAACGGAAGGCTGAGAATCCATCTCCACGAAGTCCG
TCATCCCAGACACCCAATTCCAGGAGACAGAGCGGAAAGACATTGCCAAGCCCGTCAAC
ATCACGCCAGCTCCATGAGGAAAATCTGCACATACTTCCATAGAAAAGTCCCAGGAGGAC
TTCTGTGGTCTGAACACTCAACAGAATTATAG
    
```

Clone variation with respect to NM\_016448.2  
 498 g=>n;499 g=>n;500 t=>n;501 c=>n;502 t=>n;503 g=>n;672 t=>n;1307 c=>t;2081 a=>c

**5' Read Nucleotide Sequence:**

>OriGene 5' read for NM\_016448 unedited  
 CCGTCACATTTGTAACGACTCCTATAGGCGGCCGCGAAATTCGCACGAGGGATTTGTGT  
 TGTGAGAGGCGCAAGCTGCGATTTCTGCTGAACTTGGAGGCATTTCTACGACTTTTCTCT  
 CAGCTGAGGCTTTTCTCCGACCCTGATGCTCTCAATTCGGTGTCCGCCAGCCCCAGC  
 TTGGCGTCCTGAGAAATGGATGGTCTTCAACAATACCCTCTCAATCCCTTCTGACTGGTT  
 ATCAGTGCAGTGGTAATGATGAACACACTTCTTATGGAGAAACAGGAGTCCCAGTTCCCTC  
 CTTTTGGATGTACCTTCTTCTGCTCCCAATATGGAACATGTACTAGCAGTTGCCAATG  
 AAGAAGGCTTTGTTCGATTGTATAACACAGAATCACAAAGTTTCAGAAAGAAGTGCTTCA  
 AAGAATGGATGGCTCACTGGAATGCCGTCTTTGACCTGGCCTGGGTTCTGGTGAACCTA  
 AACTTGTACAGCAGCAGGTGATCAAACAGCCAAATTTTGGGACGTAAAAGCTGGTGAGC  
 TGATTGGAACATGCAAAGGTCATCAATGCAGCCTCAAGTCAGTTGCCTTTTCTAAGTTTG  
 AGAAAGCTGTATTCTGTACGGGTGGAAGAGATGGCAACATTATGGTCTGGGATACCAGGT  
 GCAACAAAAAAGATGGGTTTTATAGGCAAGTGAATCAAATCAGTGGAGCTCACAATACCT  
 CAGACAAGCAAACCCCTTCAAACCCAAGAAGAAACAGAATTCANAAGGACTTGCTCCTT  
 CTGTGGATTTCCAGCANAGTGTTACTGTGGTCTCTCTCAAGACGAGAATACCTTANTCT  
 CCACCAGAAGCTGTGGAGGGATAATCCAAGTATGGGAATTACCGTAGAATATACTGCTTA  
 TCGACAG

**3' Read Nucleotide Sequence:**

>OriGene 3' read for NM\_016448 unedited  
 ACGCGGCACGCAATCTAGTGTGAGTTTTTTTTTTTTTTTTTTTTCAGAAAAGGTAAGGCG  
 TTTATTATTCAGGATCAGCTCAAAGTCTGACATGGACACAGGCAGGGATAATTATCTCAT  
 TACAGTTGACCTTTGGCACCCATTTAAAAGTACTAGCTTTCCAAGTGAGACATGTTATAC  
 CCAGTAGACTCGGTATAATTTCTGACAGCCAAATGTATCCAATTTCACTCAGTAGGGCT  
 GCCAGGAGATGGGTAGGGATACAAAACAAAATCATCTACTTTATCAATCTTTTTTTTTTCA  
 TGGATTTTTTTCCCCATTGGCTTTCAAAGCAAGTGAGATAAACAGCGTTACTGGCAGAT  
 ATGGTCAATAAATACATCTTCCCAAAGCCCAACAGTCAAAAAACAAACACCAATATAA  
 GCAGATTAGGCAGATTTCCATAATTCAGTTAAGGCTATGGTGTGCTTGGTTTTGACCA  
 GAGCAATTTCTATGGCTTCTTTTATTTTTCTCCCTGGATAAAACTATGCTTACTTGATCC  
 ATGCAATTTCAAGTTGTTACAGCTTAACTTATAAGATCAAAGGAATTAAGGTTGTGTCAG  
 AATAGATTTTTCAAATAATGACAAAACTGACATAAAGTCTACACAGAAGTACATAAAGT  
 CTACACAGTCTCAGGGATATGGATAAAAACAAATGAAGTTTTCATGACTGGAAGGGGGCTC  
 CCTTCTAATAAATATACATAGAAAAGTTGTAAGCCTCTTTCTGAGTTACAAAAGTGAAA  
 ATTAACAACATGGGTCAAGACACTGATACATATGNTGAATAGGGGAGGGAGTTAGATATT  
 TGCACATATACTAGAGTAGTCATACCTCTCTGATAAATCTAAGAATNTATACTTTTGCTA  
 GGCTTCATCTAAACCTATGTTTTAGACAG

**Restriction Sites:**

NotI-NotI

**ACCN:**

NM\_016448

**Insert Size:**

4180 bp

**OTI Disclaimer:**

Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

**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\\_016448.1](#), [NP\\_057532.1](#)

**RefSeq Size:** 4221 bp

**RefSeq ORF:** 2193 bp

**Locus ID:** 51514

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

**Cytogenetics:** 1q32.3

**Domains:** WD40

**Protein Families:** Druggable Genome

**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]

Transcript Variant: This variant (1) represents the longest transcript and encodes the longest isoform (1). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.