

Product datasheet for **RC207280**

CDT2 (DTL) (NM_016448) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CDT2 (DTL) (NM_016448) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CDT2
Synonyms:	CDT2; DCAF2; L2DTL; RAMP
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

**ORF Nucleotide
Sequence:**

>RC207280 ORF sequence

Red=Cloning site Blue=ORF Green=Tags(s)

 TTTTGAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGCATCGC**

ATGCTCTTCAATTCGGTGTCTCCGCCAGCCCCAGCTTGGCGTCCTGAGAAATGGATGGTCTTCACAATACC
 CTCTTCAATCCCTTCTGACTGGTTATCAGTGCAGTGGTAAATGATGAACACACTTCTTATGGAGAAACAGG
 AGTCCCAGTTCCTCCTTTTGGATGTACCTTCTCTTCTGCTCCCAATATGGAACATGTACTAGCAGTTGCC
 AATGAAGAAGGCTTTGTTTCGATTGTATAACACAGAATCACAAAGTTTCAGAAAGAAGTGCTTCAAAGAAT
 GGATGGCTCACTGGAATGCCGTCTTTGACCTGGCTGGGTTCTGGTGAACCTAACTTGTACAGCAGC
 AGGTGATCAAACAGCCAAATTTTGGGACGTAAAAGCTGGTGAGCTGATTGGAACATGCAAAGGTCAACAA
 TGCAGCCTCAAGTCAGTTGCCTTTTCTAAGTTTGAGAAAGCTGTATTCTGTACGGGTGGAAGAGATGGCA
 ACATTATGGTCTGGGATACAGGTGCAACAAAAAAGATGGGTTTATAGGCAAGTGAATCAAATCAGTGG
 AGCTCACAAATACCTCAGACAAGCAAACCCCTTCAAACCCAAGAAGAAACAGAATTCAAAGGACTTGCT
 CCTTCTGTGGATTCCAGCAAAGTGTTACTGTGGTCCTCTTTCAAGACGAGAATACCTTAGTCTCAGCAG
 GAGCTGTGGATGGGATAATCAAAGTATGGGATTTACGTAAAGATTATACTGCTTATCGACAAGAACCCTAT
 AGCATCCAAGTCTTTCTGTACCCAGGTAGCAGCACTCGAAAACCTGGATATTCAAGTCTGATTTTGGAT
 TCCACTGGCTCTACTTTATTTGCTAATTGCACAGACGATAACATCTACATGTTTAAATGACTGGGTTGA
 AGACTTCTCCAGTGGCTATTTTCAATGGACACCAGAACCTACCTTTTATGTAAATCCAGCCTTAGTCC
 AGATGACCAGTTTTATGTCAGTGGCTCAAGTGATGAAGCTGCCTACATATGGAAGGTCTCCACACCTGG
 CAACCTCTACTGTGCTCCTGGGTCACTTCTCAAGAGGTACGCTGTGTGCTGGTGTCCATCTGACTTCA
 CAAAGATTGCTACCTGTTCTGATGACAATACACTAAAAATCTGGCGCTTGAATAGAGGCTTAGAGGAGAA
 ACCAGGAGGTGATAAACTTTCCACGGTGGGTGGGCCTCTCAGAAGAAAAAAGAGTCAAGACCTGGCCTA
 GTAACAGTAACGAGTAGCCAGAGTACTCCTGCCAAAGCCCCAGGGTAAAGTGCAATCCATCCAATTCTT
 CCCCCTCATCCGAGCTTGTGCCCAAGCTGTGCTGGAGACCTCCCTCTTCTTCAAATACTCCTACGTT
 CTCTATTTAAACCTCTCCTGCCAAGGCCCGGTCTCCCATCAACAGAAGAGGCTCTGTCTCCTCCGTCTCT
 CCCAAGCCACCTTCATCTTTCAAGATGTCGATTAGAACTGGGTGACCCGAACACCTTCTCATCACCAC
 CCATCACTCCACCTGCTTCGGAGACCAAGATCATGTCTCCGAGAAAAGCCCTTATTCCTGTGAGCCAGAA
 GTCATCCCAAGCAGAGGCTTGTCTGAGTCTAGAAATAGAGTAAAGAGGAGGCTAGACTCAAGCTGTCTG
 GAGAGTGTGAAACAAAAGTGTGTGAAGAGTTGTAAGTGTGTGACTGAGCTTGATGGCCAAGTTGAAAATC
 TTCATTTGGATCTGTGCTGCCTTGCTGGTAACCAAGGAAGACCTTAGTAAGGACTCTCTAGGTCTACCAA
 ATCAAGCAAAATTGAAGGAGCTGGTACCAGTATCTCAGAGCCTCCGTCTCCTATCAGTCCGTATGCTTCA
 GAAAGCTGTGGAACGCTACCTCTTCTTTGAGACCTTGTGGAGAAGGGTCTGAAATGGTAGGCAAAGAGA
 ATAGTTCCCCAGAGAATAAAACTGGTTGTTGGCCATGGCAGCCAAACGGAAGGCTGAGAATCCATCTCC
 ACGAAGTCCGTATCCAGACACCAATTCCAGGAGACAGAGCGGAAAGACATTGCCAAGCCCGGTCAACC
 ATCACGCCAGCTCCATGAGGAAAATCTGCACATACTTCCATAGAAAGTCCCAGGAGGACTTCTGTGGTC
 CTGAACACTCAACAGAGTTA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC207280 protein sequence
Red=Cloning site Green=Tags(s)

MLFNSVLRQPQLGLVLRNGWSSQYPLQSLLTGYQCSGND EHTSYGETGVPVPPFGCTFSSAPNMEHVLAVA
NEEGFVRLYNTESQSFRRKKCFKEWMAHWNADFALAWVP GELKLVTAAAGDQTAKFWDVKAGELIGTCKGHQ
CSLKSVAFSKFEKAVFCTGGRDGNIMVWDRTRCNKKGDFYRQVNQISGAHNTSDKQTPSKPKKKQNSKGLA
PSVDFQQSVTVVLFDQENTLVSAGAVDGIKVDLNRKNYTA YRQEPIASKSFLYPGSSSTRKLGYSSLILD
STGSTLFANCTDDNIYMFNMTGLKTPVAIFNGHQNSTFYV KSSLPDDQFLVSGSSDEAAYIWKVSTPW
QPPTVLLGHSQEVTSVCWCPSDFTKIATCSDDNLT LKIWRNLNRGLEEKPGGDKLSTVGWASQKKKESRPL
VTVTSSQSTPAKAPRVKCNPSNSSPSSAACAPSCAGD LPLPSNTPTFSIKTSPAKARSPINRRGSVSSVS
PKPPSSFKMSIRNWTRTPSSSPPITPPASETKIMSPR KALIPVSQKSSQAEACSESRRNVKRRLDSSCL
ESVKQKCVKNSCNVTELDGQENLHLDLCLLAGNQEDL SKDSLGP TKSSKIEGAGTSISEPPSPIPYAS
ESCGTLPLPLRPCGEGSEMVGKENSPPENKNWLLAMA AKRKAENPSRSPSSQTPNSRRQSGKTLPSPTV
ITPSSMRKICTYFHRKSOEDFCGPEHSTEL

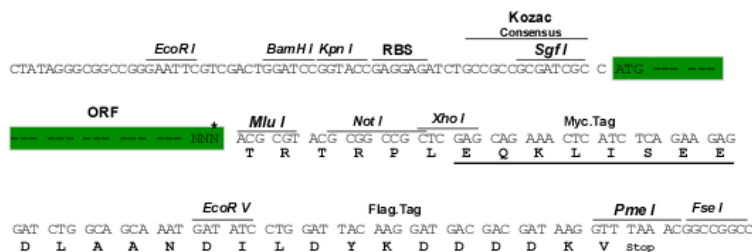
TRTRPLEOKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6041_e03.zip

Restriction Sites: Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

ACCN: NM 016448

ORF Size: 2190 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

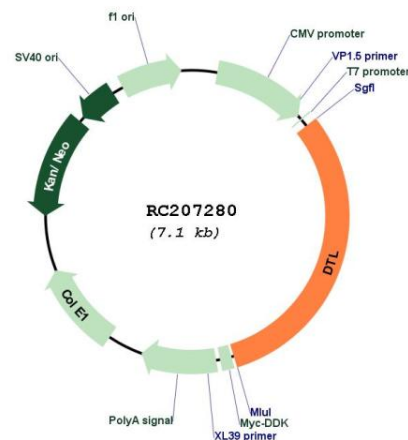
OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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.
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	<u>NM_016448.4</u>
RefSeq Size:	4611 bp
RefSeq ORF:	2193 bp
Locus ID:	51514
UniProt ID:	<u>Q9NZJ0</u>
Cytogenetics:	1q32.3
Domains:	WD40
Protein Families:	Druggable Genome
MW:	79.5 kDa

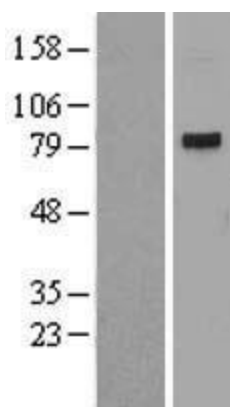
Gene Summary:

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]

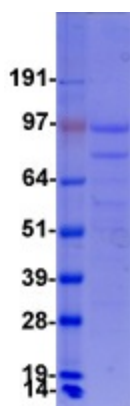
Product images:



Circular map for RC207280



Western blot validation of overexpression lysate (Cat# [LY402552]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC207280 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified DTL protein (Cat# [TP307280]). The protein was produced from HEK293T cells transfected with DTL cDNA clone (Cat# RC207280) using MegaTran 2.0 (Cat# [TT210002]).