

Product datasheet for **RG207280**

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:	TurboGFP
Symbol:	CDT2
Synonyms:	CDT2; DCAF2; L2DTL; RAMP
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide
Sequence:**

>RG207280 representing NM_016448
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGCTCTTCAATTCGGTGTCCGCCAGCCCCAGCTTGGCGTCCTGAGAAATGGATGGTCTTCACAATACC
 CTCTTCAATCCCTTCTGACTGGTTATCAGTGCAGTGGTAATGATGAACACACTTCTTATGGAGAAACAGG
 AGTCCCAGTTCCTCCTTTTGGATGTACCTTCTCTTCTGCTCCCAATATGGAACATGTACTAGCAGTTGCC
 AATGAAGAAGGCTTTGTTTCGATTGTATAACACAGAATCACAAAGTTTCAGAAAGAAGTGCTTCAAAGAAT
 GGATGGCTCACTGGAATGCCGTCTTTGACCTGGCCTGGGTTCTGGTGAACCTAACTTGTACAGCAGC
 AGGTGATCAAACAGCCAAATTTGGGACGTAAAAGCTGGTGAGCTGATTGGAACATGCAAAGGTCATCAA
 TGCAGCCTCAAGTCAGTTGCCTTTCTAAGTTTGAGAAAGCTGTATTCTGTACGGGTGGAAGAGATGGCA
 ACATTATGGTCTGGGATACAGGTGCAACAAAAAAGATGGGTTTATAGGCAAGTGAATCAAATCAGTGG
 AGCTCACAAATACCTCAGACAAGCAAACCCCTTCAAACCCAAGAAGAAACAGAATTCAAAGGACTTGCT
 CCTTCTGTGGATTCCAGCAAAGTGTTACTGTGGTCCTCTTCAAGACGAGAATACCTTAGTCTCAGCAG
 GAGCTGTGGATGGGATAATCAAAGTATGGGATTTACGTAAGAATTATACTGCTTATCGACAAGAACCCTAT
 AGCATCCAAGTCTTTCTGTACCCAGGTAGCAGCACTCGAAAACCTGGATATTCAAGTCTGATTTTGGAT
 TCCACTGGCTCTACTTTATTTGCTAATTGCACAGACGATAACATCTACATGTTTAAATGACTGGGTTGA
 AGACTTCTCCAGTGGCTATTTTCAATGGACACCAGAACCTACCTTTTATGTAAATCCAGCCTTAGTCC
 AGATGACCAGTTTTTAGTCAGTGGCTCAAGTGATGAAGCTGCCTACATATGGAAGGTCTCCACACCTGG
 CAACCTCTACTGTGCTCCTGGGTCAATTCTCAAGAGGTACGCTGTGTGCTGGTGTCCATCTGACTTCA
 CAAAGATTGCTACCTGTTCTGATGACAATACACTAAAAATCTGGCGCTTGAATAGAGGCTTAGAGGAGAA
 ACCAGGAGGTGATAAACTTTCCACGGTGGGTTGGGCCTCTCAGAAGAAAAAAGAGTCAAGACCTGGCCTA
 GTAACAGTAACGAGTAGCCAGAGTACTCCTGCCAAAGCCCCAGGGTAAAGTGCAATCCATCCAATTCTT
 CCCCCTCATCCGAGCTTGTGCCCAAGCTGTGCTGGAGACCTCCCTCTTCTTCAAATACTCCTACGTT
 CTCTATTTAAACCTCTCCTGCCAAGGCCCGGTCTCCCATCAACAGAAGAGGCTCTGTCTCCTCCGTCTCT
 CCCAAGCCACCTTCATCTTTCAAGATGTCGATTAGAACTGGGTGACCCGAACACCTTCTCATCACCAC
 CCATCACTCCACCTGCTTCGGAGACCAAGATCATGTCTCCGAGAAAAGCCCTTATTCCTGTGAGCCAGAA
 GTCATCCCAAGCAGAGGCTTGTCTGAGTCTAGAAATAGAGTAAAGAGGAGGCTAGACTCAAGCTGTCTG
 GAGAGTGTGAAACAAAAGTGTGTGAAGAGTTGTAAGTGTGTGACTGAGCTTGATGGCCAAGTTGAAAATC
 TTCATTTGGATCTGTGCTGCCTTGCTGGTAACCAAGGAAGACCTTAGTAAGGACTCTCTAGGCTCTACCAA
 ATCAAGCAAAATTGAAGGAGCTGGTACCAGTATCTCAGAGCCTCCGTCTCCTATCAGTCCGTATGCTTCA
 GAAAGCTGTGGAACGCTACCTCTTCTTTGAGACCTTGTGGAGAAGGGTCTGAAATGGTAGGCAAAGAGA
 ATAGTTCCCCAGAGAATAAACTGGTTGTTGGCCATGGCAGCCAAACGGAAGGCTGAGAATCCATCTCC
 ACGAAGTCCGTATCCAGACACCAATTCCAGGAGACAGAGCGGAAAGACATTGCCAAGCCCGGTCAACC
 ATCACGCCAGCTCCATGAGGAAAATCTGCACATACTTCCATAGAAAGTCCCAGGAGGACTTCTGTGGTC
 CTGAACACTCAACAGAGTTA

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence: >RG207280 representing NM_016448
 Red=Cloning site Green=Tags(s)

MLFNSVL RQPQLGVL R NGWSSQYPLQSL LTGYQCSGNDEHTSYGETGVPVPPFGCTFSSAPNMEHVLAVA
 NEEGFVRLYNTESQSFRKKCFKEWMAHNAVF DLAWVPGELKL VTAAGDQTAKFWDVKAGELIGTCKGHQ
 CSLKSVAFSKF EKA VFCTGGRDGNIMVWDTRCNKKDGFYRQVNQISGAHNTSDKQTPSKPKKKQNSKGLA
 PSVDFQQSVTVVLFQDENTLVSAGAVDGIK VWDLRKNYTA YRQEPIASKSFLYPGSSTRKLGYSSLILD
 STGSTLFANCTDDNIYMFNMTGLKTSPVAIFNGHQNSTFYVKSSSPDDQFLVSGSSDEAAIWKVSTPW
 QPPTVLLGHSQEVT SVCWCP SDFTKIATCSD DNTLKIWRLNRGLEEKPGGDKLSTVGWASQKKKESRPGL
 VTVTSSQSTPAKAPRVKCNPSNSSPSSAACAPSCAGDLPLSNTPTFSIKTSPAKARSPINRRGSVSSVS
 PKPPSSFKMSIRNWVTRTPSSSPITPPASETKIMSPRKALIPVSQKSSQAEACSESRRNVKRRLDSSCL
 ESVKQKCVKSCNCVTELDGQVENLHLDL CCLAGNQEDLSKDSLGP TKSSKIEGAGTSISEPPSPISPYAS
 ESCGTLPLPLRPCGEGSEMVGKENSSPENKNWLLAMA AKRAENSPRSPSSQTPNSRRQSGKTLPSPT
 ITPSSMRKICTYFHRKSQEDFCGPEHSTEL

TRTRPLE – GFP Tag – V

Restriction Sites: SgfI-MluI

Cloning Scheme:



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: [NM_016448.1](#), [NP_057532.1](#)

RefSeq Size: 4221 bp

RefSeq ORF: 2193 bp

Locus ID: 51514

UniProt ID: [Q9NZJ0](#)

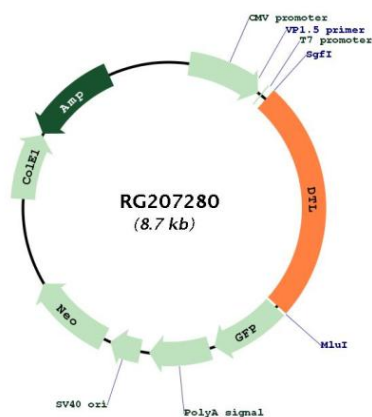
Cytogenetics: 1q32.3

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]

Product images:



Circular map for RG207280