

## Product datasheet for **RC203304**

### Cullin 2 (CUL2) (NM\_003591) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Cullin 2 (CUL2) (NM_003591) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Cullin 2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide  
Sequence:**

>RC203304 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTCCTTTGAAACCAAGAGTAGTAGATTTTGTATGAAACATGGAACAAACTTTTGACGACAATAAAAGCCG  
 TGGTCATGTTGGAATACGTCGAAAGAGCAACATGGAATGACCGTTTCTCAGATATCTATGCTTTATGTGT  
 GGCTATCCTGAACCCCTTGGAGAAAGACTTTATACAGAACTAAGATTTTTTGGAAAAATCATGTTTCGG  
 CATTGTCATAAGAGAGTTTTGGAGTCAGAAGAACAAGTACTTGTATGTATCATAGGTAAGTGGGAAGAT  
 ACAGCAAGGGTGCAGACTATATGGACTGCTTATATAGGTATCTCAACACCCAGTTTATTAAGAAATAA  
 ATTAACAGAAGCGGACCTTCAGTATGGCTATGGTGGTGTAGATATGAATGAACCCTTATGGAAATAGGA  
 GAGCTAGCATTGGATATGTGGAGGAAATGATGGTTGAACCCTTCAGGCCATCCTTATCCGAATGCTGC  
 TCCGAGAAATCAAAAATGATCGTGGTGGAGAAGACCCAAACCAGAAAGTAAATCCATGGGGTTATTAAC  
 CTTTGTTCATGTTGAACAGTATAAGAAAAAATCCCTTAAAGTTTTATCAGGAAATTTTTGAGTCTCCC  
 TTTCTGACTGAAACAGGAGAGTATTACAAACAAGAAGCTTCAAATTTATTACAAGAACTAACTGCTCAC  
 AGTATATGGAAAAGGTTCTAGGTAGATTAAGATGAAGAAATTCGATGTCGAAAATACCTACATCCAAG  
 TTCATATACTAAGGTGATTCATGAATGTCAACAACGAATGGTAGCAGACCACTTACAGTTTTTACATGCA  
 GAATGTCAATAATAATTCGACAAGAGAAAAAATGACATGGCAAAATATGTACGCTTACTCCGTGCTG  
 TGTCCTACTGGTTTACCTCATATGATTCAGGAGCTGCAAAACCACATCCATGATGAGGGCCTTCGAGCAAC  
 CAGCAACCTTACTCAGGAAAACATGCCAACACTATTTGTGGAGTCAGTTTTGGAAGTGCATGGTAAATTT  
 GTTCAGCTTATCAACACTGTTTTGAATGGTGTATCAGCATTTTATGAGTGGTGGATAAGGCCCTTACGT  
 CAGTTGTAATACAGAGAACCCTAAGTCTGTTTGGCAAGCACCTGAACTGCTTAAAGTACTGTGACAA  
 CTTACTGAAGAAGTCAGCGAAAGGGATGACAGAGAATGAAGTGGAAAGACAGGCTCACGAGCTTCATCACA  
 GTGTTCAAATACATTGATGACAAGGACGCTTTTCAAAGTTCTACGCAAGAATGCTGGCAAAACGTTTAA  
 TTCATGGGTTATCCATGTCTATGGACTCTGAAGAAGCCATGATCAACAAATTAAGCAAGCCTGTGGTTA  
 TGAGTTTACCAGCAAGCTACATCGGATGTATACAGATATGAGTGTGAGCGCTGATCTCAACAATAAGTTC  
 AACATTTTATCAAAAACCAAGACACAGTAATAGATTTGGGAATTAGTTTTCAAATATATGTTCTACAGG  
 CTGGTGCCTGCTTACTCAGGCTCCTTCTACGTTTGAATTCACGTTTCCAGGAAATAGAAAAAGTGT  
 ACAGATGTTTGAATTTTTATAGCCAACATTTAGTGGAAAGAACTTACATGGTTACATTATCTGTGT  
 ACAGGTGAAGTTAAAATGAACTATTTGGGCAACCATATGTAGCCATGGTTACAACATACCAATGGCAG  
 TTCTTCTGCCTTAAACAACAGTAAACTGTGAGTTATAAAGAGCTTCAGGACAGCACTCAGATGAATGA  
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 GATATTGATGCAGAACTTTCGTTTTCAATTAATATGAACTTTAGCAGTAAAGAACAATAATTAATTA  
 CTACATCAATGCAGAAAGACACACCACAAGAAATGGAGCAGACTAGAAGTGCAGTTGATGAGGACCGGAA  
 AATGTATCTCAAGCTGCTATAGTTCGTATCATGAAAGCACGAAAAGTGCCTTCGGCACAATGCCCTTATT  
 CAAGAGGTGATTAGCCAGTCAAGAGCTAGGTTTAAATCCAGTATCAGCATGATTAAGAAGTGTATTGAAG  
 TTCTGATAGACAAACAATACATAGAACGCAGCCAGGCGTCGGCAGATGAATACAGCTACGTCGCG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAGGTTTAA

**Protein Sequence:** >RC203304 protein sequence  
 Red=Cloning site Green=Tags(s)

MSLKPRVVDFDETWNKLLTTIKAVVMLEYVERATWDRFSDIYALCVAYPEPLGERLYTETKIFLENHVR  
 HLHKRVLESEEQVLVMYHRYWEEYSKGDYMDCLYRYLNTQFIKKNKLEADLQYGGVDMNEPLMEIG  
 ELALDMWRKLMVEPLQAAILIRMLLREIKNDRGGEDPNQKVIHGVINSFVHVEQYKKKFKFYQEIFESP  
 FLTETGEYKQEAASNLQESNCSQYMEKVLGRLKDEEIRCRKYLHPSSYTKVIHECQQRMVADHLQFLHA  
 ECHNIIIRQEKKNDMANMYVLLRAVSTGLPHMIQELQNHIEHDEGLRATSNLTQENMPTLFVESVLEVHGKF  
 VQLINTVLNGDQHFMSALDKALTSVVNYREPKSVCKAPELLAKYCDNLLKKSAGKMTENEVEDRLTSFIT  
 VFYIDDKDVFQKFYARMLAKRLIHGLSMSMDSEEAMINKLKQACGYEFTSKLHRMYTDMVSADLNKFK  
 NNFIKNQDVIDLGISFQIYVYLQAGAWPLTQAPSSTFAIPQELEKSVQMFELFYSQHFSGRKLTLWHLK  
 TGEVKMNYLGKPYVAMVTTYQMAVLLAFNNSETVSYKELQDSTQMNKELTKTIKSLLDVKMINHDSEKE  
 DIDAESSFSLNMNFSKRTKFKITTSMQKDTPEMEQTRSAVDEDRKMYLQAAIVRIMKARKVLRHNALI  
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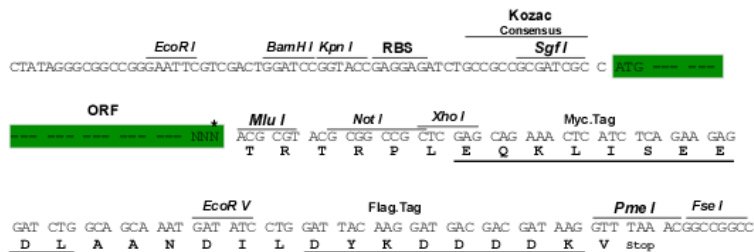
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6219\\_c01.zip](https://cdn.origene.com/chromatograms/mk6219_c01.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\_003591

**ORF Size:** 2235 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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\\_003591.4](#)

**RefSeq Size:** 4238 bp

**RefSeq ORF:** 2238 bp

**Locus ID:** 8453

**UniProt ID:** [Q13617](#)

**Cytogenetics:** 10p11.21

**Domains:** CULLIN

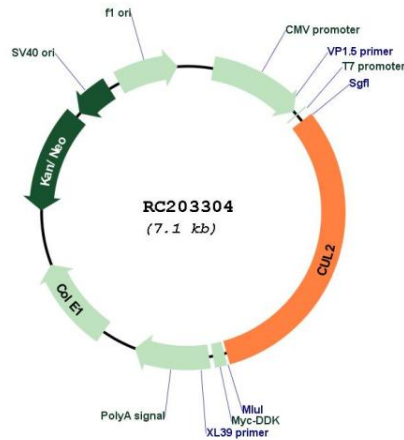
**Protein Families:** Druggable Genome

**Protein Pathways:** Pathways in cancer, Renal cell carcinoma, Ubiquitin mediated proteolysis

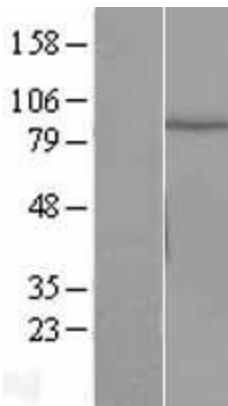
**MW:** 87 kDa

**Gene Summary:**

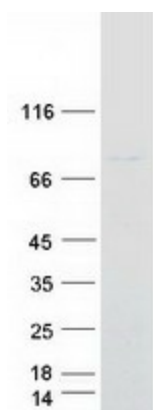
Core component of multiple cullin-RING-based ECS (ElonginB/C-CUL2/5-SOCS-box protein) E3 ubiquitin-protein ligase complexes, which mediate the ubiquitination of target proteins. ECS complexes and ARIH1 collaborate in tandem to mediate ubiquitination of target proteins (PubMed:27565346). May serve as a rigid scaffold in the complex and may contribute to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme. The E3 ubiquitin-protein ligase activity of the complex is dependent on the neddylation of the cullin subunit and is inhibited by the association of the deneddylated cullin subunit with TIP120A/CAND1. The functional specificity of the ECS complex depends on the substrate recognition component. ECS(VHL) mediates the ubiquitination of hypoxia-inducible factor (HIF).[UniProtKB/Swiss-Prot Function]

**Product images:**


Circular map for RC203304



Western blot validation of overexpression lysate (Cat# [LY418560]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC203304 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified CUL2 protein (Cat# [TP303304]). The protein was produced from HEK293T cells transfected with CUL2 cDNA clone (Cat# RC203304) using MegaTran 2.0 (Cat# [TT210002]).