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Product datasheet for RC231826

DIO2 (NM_001242502) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	DIO2 (NM_001242502) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	DIO2
Synonyms:	5DII; D2; DIOII; SelY; TXDI2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>RC231826 representing NM_001242502 Red=Cloning site Blue=ORF Green=Tags(s) TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC GCCGCGATCGCC ATGGGCATCCTCAGCGTAGACTTGCTGATCACACTGCAAATTCTGCCAGTTTTTTTCTCCAACTGCCTCT TCCTGGCTCTCTATGACTCGGTCATTCTGCTCAAGCACGTGGTGCTGCTGTTGAGCCGCTCCAAGTCCAC TCGCGGAGAGTGGCGGCGCATGCTGACCTCAGAGGGACTGCGCTGCGTCTGGAAGAGCTTCCTCCTCGAT GCCTACAAACAGCTAAATTGTCCTCCATCAGGTTTTAGCAAAGATGGACACATTTTATGACTAGTATATG AAGCTTATAAAAGCAGACTACTGGTCTACTCACATTTGGATTTATGGATGACTGACAGTGTTGTACTTAC TCTAAATTTCCCAAGGCAAATTAGTCTGTGTTTTGGAAAGAATTCTGCAGCTGAACTATACATTGTTTCT AAGAAGGAGAAGGTGCCT ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT ACAAGGATGACGACGATAAGGTTTAA
Protein Sequence:	>RC231826 representing NM_001242502 Red=Cloning site Green=Tags(s) MGILSVDLLITLQILPVFFSNCLFLALYDSVILLKHVVLLLSRSKSTRGEWRRMLTSEGLRCVWKSFLLD AYKQLNCPPSGFSKDGHIL*LVYEAYKSRLLVYSHLDLWMTDSVVLTLNFPRQISLCFGKNSAAELYIVS KKEKVP TRTRPLEQKLISEEDLAANDILDYKDDDDKV
Restriction Sites:	SgfI-MluI

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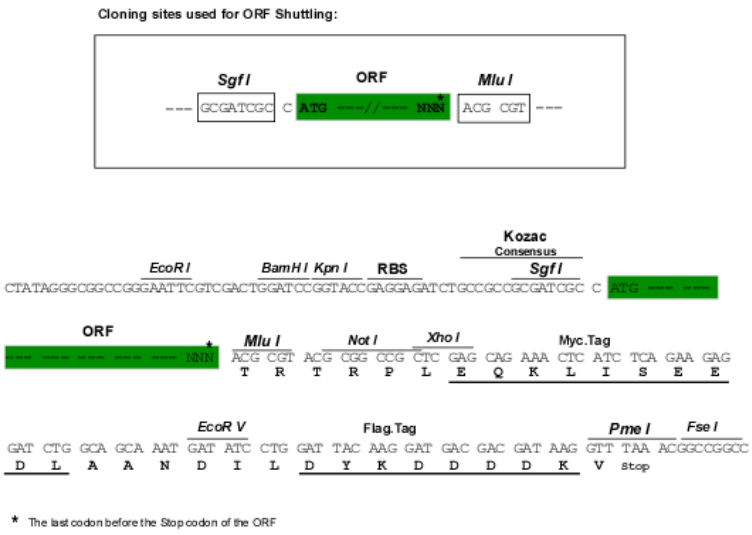
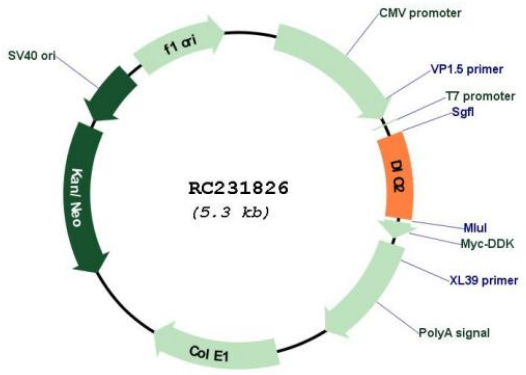
Cloning Scheme:



Plasmid Map:



ACCN:	NM_001242502
ORF Size:	438 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_001242502.1, NP_001229431.1
RefSeq Size:	6284 bp
RefSeq ORF:	441 bp
Locus ID:	1734
UniProt ID:	Q92813
Cytogenetics:	14q31.1
Protein Families:	Druggable Genome
MW:	17.2 kDa
Gene Summary:	The protein encoded by this gene belongs to the iodothyronine deiodinase family. It catalyzes the conversion of prohormone thyroxine (3,5,3',5'-tetraiodothyronine, T4) to the bioactive thyroid hormone (3,5,3'-triiodothyronine, T3) by outer ring 5'-deiodination. This gene is widely expressed, including in thyroid and brain. It is thought to be responsible for the 'local' production of T3, and thus important in influencing thyroid hormone action in these tissues. It has also been reported to be highly expressed in thyroids of patients with Graves disease, and in follicular adenomas. The intrathyroidal T4 to T3 conversion by this enzyme may contribute significantly to the relative increase in thyroidal T3 production in these patients. This protein is a selenoprotein containing the non-standard amino acid, selenocysteine (Sec), which is encoded by the UGA codon that normally signals translation termination. The 3' UTRs of selenoprotein mRNAs contain a conserved stem-loop structure, designated the Sec insertion sequence (SECIS) element, that is necessary for the recognition of UGA as a Sec codon, rather than as a stop signal. Unlike the other two members (DIO1 and DIO3) of this enzyme family, the mRNA for this gene contains an additional in-frame UGA codon that has been reported (in human) to function either as a Sec or a stop codon, which can result in two isoforms with one or two Sec residues; however, only the upstream Sec (conserved with the single Sec residue found at the active site in DIO1 and DIO3) was shown to be essential for enzyme activity (PMID:10403186). Alternatively spliced transcript variants have been described for this gene. [provided by RefSeq, Oct 2018]