

## Product datasheet for **TR313472**

### DIO2 Human shRNA Plasmid Kit (Locus ID 1734)

#### Product data:

Product Type:	shRNA Plasmids
Product Name:	DIO2 Human shRNA Plasmid Kit (Locus ID 1734)
Locus ID:	1734
Synonyms:	5DII; D2; DIOII; SELENOY; SeIY; TXDI2
Vector:	pRS (TR20003)
E. coli Selection:	Ampicillin
Mammalian Cell Selection:	Puromycin
Format:	Retroviral plasmids
Components:	DIO2 - Human, 4 unique 29mer shRNA constructs in retroviral untagged vector(Gene ID = 1734). 5µg purified plasmid DNA per construct 29-mer scrambled shRNA cassette in pRS Vector, TR30012, included for free.
RefSeq:	<a href="#">NM_000793</a> , <a href="#">NM_001007023</a> , <a href="#">NM_001242502</a> , <a href="#">NM_001242503</a> , <a href="#">NM_013989</a> , <a href="#">NM_001324462</a> , <a href="#">NM_000793.2</a> , <a href="#">NM_000793.3</a> , <a href="#">NM_000793.4</a> , <a href="#">NM_000793.5</a> , <a href="#">NM_001007023.1</a> , <a href="#">NM_001007023.2</a> , <a href="#">NM_001007023.3</a> , <a href="#">NM_001007023.4</a> , <a href="#">NM_013989.1</a> , <a href="#">NM_013989.2</a> , <a href="#">NM_013989.3</a> , <a href="#">NM_013989.4</a> , <a href="#">NM_001242503.1</a> , <a href="#">NM_001242503.2</a> , <a href="#">NM_001242502.1</a> , <a href="#">NM_001242502.2</a> , <a href="#">BC074882</a> , <a href="#">BC074882.2</a> , <a href="#">BC063118</a> , <a href="#">BC136514</a> , <a href="#">NR_158990</a> , <a href="#">NR_158991</a> , <a href="#">NM_001366496</a> , <a href="#">NM_013989.5</a>
UniProt ID:	<a href="#">Q92813</a>



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<b>Summary:</b>	<p>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]</p>
<b>shRNA Design:</b>	<p>These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact <a href="mailto:techsupport@origene.com">techsupport@origene.com</a>. If you need a special design or shRNA sequence, please utilize our <a href="#">custom shRNA service</a>.</p>
<b>Performance Guaranteed:</b>	<p>OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.</p> <p>For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at <a href="mailto:techsupport@origene.com">techsupport@origene.com</a>. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).</p>