Recombinant Rat Dio2 Protein, His&GST-tagged

Cat. No. Dio2-1341R **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Rat Dio2 Protein (Ser30-Thr129) with N-His&GST tag was expressed in E. coli.
Species	Rat
Source	E.coli
ProteinLength	Ser30-Thr129
Description	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 expressed in a few tissues in rat, including brain, pituitary and brown adipose tissue. It is thought to be responsible for the 'local' production of T3, and thus important in influencing thyroid hormone action in these tissues. Studies in rat suggest that this gene may play an important role in the regulation of lipid metabolism and thermogenesis, and in osteoarthritis pathogenesis by enhancing the chondrocyte hypertrophy and inflammatory response. 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

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	UGA codon that has been reported (in human) to function either as a Sec or a stop codon, resulting in two potential 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). In addition, the lack of conservation of the protein extension past the second TGA codon suggests that the one-Sec containing isoform represents the canonical form.
Form	Freeze-dried powder
Molecular Mass	Predicted Molecular Mass: 44.1 kDa Accurate Molecular Mass: 44 kDa
Purity	> 90%
Applications	Positive Control; Immunogen; SDS-PAGE; WB.
Stability	The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37 centigrade for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.
Storage	Avoid repeated freeze/thaw cycles. Store at 2-8 centigrade for one month. Aliquot and store at -80 centigrade for 12 months.
Storage Buffer	PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
Reconstitution	Reconstitute in PBS or others.

GENE INFORMATION

Gene Name	Dio2 deiodinase, iodothyronine, type II [Rattus norvegicus (Norway rat)]

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Official Symbol	Dio2
Synonyms	DIO2; deiodinase, iodothyronine, type II; type II iodothyronine deiodinase; type 2 DI; type-II 5-deiodinase; deiodinase, iodothyronine, type 2; 5DII; DIOII;
Gene ID	65162
mRNA Refseq	NM_031720
Protein Refseq	NP_113908
UniProt ID	P70551

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