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Product Information

Magic™ Membrane Protein Human DIO2 (Iodothyronine deiodinase 2) Expressed *in vitro E.coli* expression system, Full Length

{AlternativeNames}

Cat. No.: **MPX1550K**
This product is for research use only and is not intended for diagnostic use.

This product is a Human DIO2 membrane protein expressed *in vitro E.coli* expression system. The protein is for research use only and is not approved for use in humans or in clinical diagnosis.

Product Specifications

Host Species
Human

Target Protein
DIO2

Protein Length
Full Length

Protein Class
Oxidoreductase

TMD
1

Sequence
MGILSVDLLITLQILPVFFSNCLFLALYDSVILLKHVVLLLSRSKSTRGEWRRMLTSEGLRCVWKSFLLDA
YKQVKLGEDAPNSSVVHVSSTEGGDNSGNGTQEKIAEGATCHLLDFASPERPLVVNFGSATUPPFTSQLP
AFRKLVEEFSSVADFLLVYIDEAHPSDGWAIPGDSSLSFEVKKHQNQEDRCAAAQQLLERFSLPPQCRVV
ADRMDNNANIAYGVAFERVCIVQRQKIAYLGGKGPFSYNLQEVRHWLEKNFSKRUKKTRLAG

Product Description

Expression Systems
in vitro E.coli expression system

Tag
10xHis tag at the N-terminus

Protein Format
Soluble

Form

Liquid or Lyophilized powder

Buffer

Tris/PBS-based buffer, 6% Trehalose, pH 8.0

Storage

Aliquot and store at -20°C or lower. For long term storage, we recommend to store at -70°C or lower. Avoid freeze/thaw cycles.

Target

Target Protein

DIO2

Full Name

Iodothyronine deiodinase 2

Introduction

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.

Alternative Names

DIO2; D2; 5DII; SelY; DIOII; TXDI2; SELENOY; type II iodothyronine deiodinase; deiodinase, iodothyronine type II; deiodinase-2; deiodonase-2; selenoprotein Y; thyroxine deiodinase, type II; type 2 DI; type 2 iodothyronine deiodinase; type-II 5'-deiodinase; type-II 5'deiodinase; Iodothyronine deiodinase 2

Gene ID

1734

UniProt ID

Q92813

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