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# Product datasheet for RC210659

## Thyroid Peroxidase (TPO) (NM_000547) Human Tagged ORF Clone

### Product data:

| | |
|---|---|
| **Product Type:** | Expression Plasmids |
| **Product Name:** | Thyroid Peroxidase (TPO) (NM_000547) Human Tagged ORF Clone |
| **Tag:** | Myc-DDK |
| **Symbol:** | Thyroid Peroxidase |
| **Synonyms:** | MSA; TDH2A; TPX |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-Entry (PS100001) |
| **E. coli Selection:** | Kanamycin (25 ug/mL) |

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**ORF Nucleotide Sequence:**

>RC210659 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGAGAGCGCTGGCTGTGCTGTCTGTCACGCTGGTTATGGCCTGCACAGAAGCCTTCTTCCCCTTCATCT
CGAGAGGGAAAGAACTCCTTTGGGGAAAGCCTGAGGAGTCTCGTGTCTCTAGCGTCTTGGAGGAAAGCAA
GCGCCTGGTGGACACCGCCATGTACGCCACGATGCAGAGAAACCTCAAGAAAAGAGGAATCCTTTCTGCA
GCTCAGCTTCTGTCTTTTTCCAAACTTCCTGAGCCAACAAGCGGAGTGATTGCCCGAGCAGCAGAGATAA
TGGAAACATCAATACAAGCGATGAAAAGAAAAGTCAACCTGAAAACTCAACAATCACAGCATCCAACGGA
TGCTTTATCAGAAGATCTGCTGAGCATCATTGCAAACATGTCTGGATGTCTCCCTTACATGCTGCCCCCA
AAATGCCCAAACACTTGCCTGGCGAACAAATACAGGCCCATCACAGGAGCTTGCAACAACAGAGACCACC
CCAGATGGGGCGCCTCCAACACGGCCCTGGCACGATGGCTCCCTCCAGTCTATGAGGACGGCTTCAGTCA
GCCCCGAGGCTGGAACCCCGGCTTCTTGTACAACGGGTTCCCACTGCCCCCGGTCCGGGAGGTGACAAGA
CATGTCATTCAAGTTTCAAATGAGGTTGTCACAGATGATGACCGCTATTCTGACCTCCTGATGGCATGGG
GACAATACATCGACCACGACATCGCGTTCACACCACAGAGCACCAGCAAAGCTGCCTTCGGGGGAGGGGC
TGACTGCCAGATGACTTGTGAGAACCAAAACCCATGTTTTCCCATACAACTCCCGGAGGAGGCCCGGCCG
GCCGCGGGCACCGCCTGTCTGCCCTTCTACCGCTCTTCGGCCGCCTGCGGCACCGGGGACCAAGGCGCGC
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CGCGTCCACGCGCGCCTCCGGGACTCCGGCCGCGCCTACCTGCCCTTCGTGCCGCCACGCGCGCCTGCGG
CCTGTGCGCCCGAGCCCGGCATCCCCGGAGAGACCCGCGGGCCCTGCTTCCTGGCCGGAGACGGCCGCGC
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CTCACCAGGGTGCCCATGGATGCCTTCCAAGTCGGCAAATTCCCCGAAGACTTTGAGTCTTGTGACAGCA
TCACTGGCATGAACCTGGAGGCCTGGAGGGAAACCTTTCCTCAAGACGACAAGTGTGGCTTCCCAGAGAG
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GCAAAGATGTGAACGAGTGTGCAGACGGTGCCCACCCCCCCTGCCACGCCTCTGCGAGGTGCAGAAACAC
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GCTCAGGACTCGGAGCAGGAGAGTGCTGGGATGGAAGGCCGGGATACTCACAGGCTGCCGAGAGCCCTC

ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGA
TTACAAGGATGACGACGATAAGGTTTAA


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**Protein Sequence:**

>RC210659 protein sequence
Red=Cloning site Green=Tags(s)

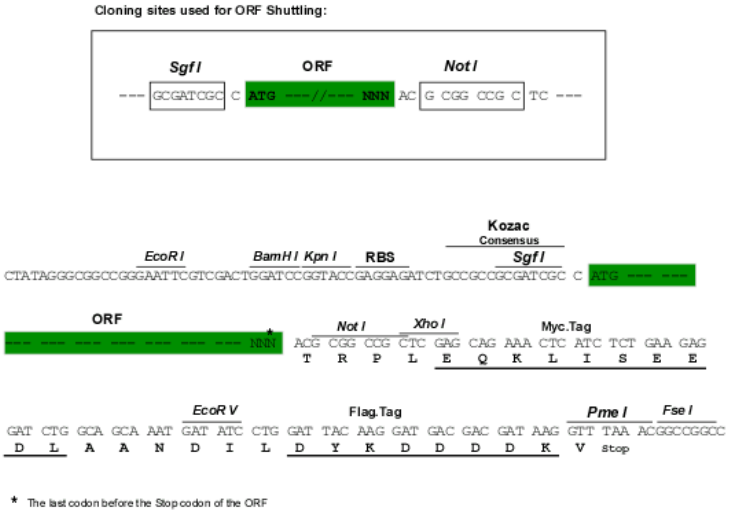
MRALAVLSVTLVMACTEAFFPFISRGKELLWGKPEESRVSSVLEESKRLVDTAMYATMQRNLKKRGILSA
AQLLSFSKLPEPTSGVIARAAEIMETSIQAMKRKVNLKTQQSQHPTDALSEDLLSIIANMSGCLPYMLPP
KCPNTCLANKYRPITGACNNRDHPRWGASNTALARWLPPVYEDGFSQPRGWNPGFLYNGFPLPPVREVTR
HVIQVSNEVVTDDDRYSDLLMAWGQYIDHDIAFTPQSTSKAAFGGGADCQMTCENQNPCFPIQLPEEARP
AAGTACLPFYRSSAACGTGDQGALFGNLSTANPRQQMNGLTSFLDASTVYGSSPALERQLRNWTSAEGLL
RVHARLRDSGRAYLPFVPPRAPAACAPEPGIPGETRGPCFLAGDGRASEVPSLTALHTLWLREHNRLAAA
LKALNAHWSADAVYQEARKVVGALHQIITLRDYIPRILGPEAFQQYVGPYEGYDSTANPTVSNVFSTAAF
RFGHATIHPLVRRLDASFQEHPDLPGLWLHQAFFSPWTLLRGGGLDPLIRGLLARPAKLQVQDQLMNEEL
TERLFVLSNSSTLDLASINLQRGRDHGLPGYNEWREFCGLPRLETPADLSTAIASRSVADKILDLYKHPD
NIDVWLGGLAENFLPRARTGPLFACLIGKQMKALRDGDWFWWENSHVFTDAQRRELEKHSLSRVICDNTG
LTRVPMDAFQVGKFPEDFESCDSITGMNLEAWRETFPQDDKCGFPESVENGDFVHCEESGRRVLVYSCRH
GYELQGREQLTCTQEGWDFQPPLCKDVNECADGAHPPCHASARCRNTKGGFQCLCADPYELGDDGRTCVD
SGRLPRVTWISMSLAALLIGGFAGLTSTVICRWTRTGTKSTLPISETGGGTPELRCGKHQAVGTSPQRAA
AQDSEQESAGMEGRDTHRLPRAL

TRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** https://cdn.origene.com/chromatograms/mk6798_d01.zip

**Restriction Sites:** SgfI-NotI

**Cloning Scheme:**




**ACCN:** NM_000547

**ORF Size:** 2799 bp

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|---|---|
| **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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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_000547.5 |
| **RefSeq Size:** | 3152 bp |
| **RefSeq ORF:** | 2802 bp |
| **Locus ID:** | 7173 |
| **UniProt ID:** | P07202 |
| **Cytogenetics:** | 2p25.3 |
| **Protein Families:** | Druggable Genome, ES Cell Differentiation/IPS, Transmembrane |
| **Protein Pathways:** | Autoimmune thyroid disease, Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Jak-STAT signaling pathway, Metabolic pathways, Tyrosine metabolism |
| **MW:** | 102.9 kDa |
| **Gene Summary:** | This gene encodes a membrane-bound glycoprotein. The encoded protein acts as an enzyme and plays a central role in thyroid gland function. The protein functions in the iodination of tyrosine residues in thyroglobulin and phenoxy-ester formation between pairs of iodinated tyrosines to generate the thyroid hormones, thyroxine and triiodothyronine. Mutations in this gene are associated with several disorders of thyroid hormonogenesis, including congenital hypothyroidism, congenital goiter, and thyroid hormone organification defect IIA. Multiple transcript variants encoding distinct isoforms have been identified for this gene, but the full-length nature of some variants has not been determined. [provided by RefSeq, May 2011] |

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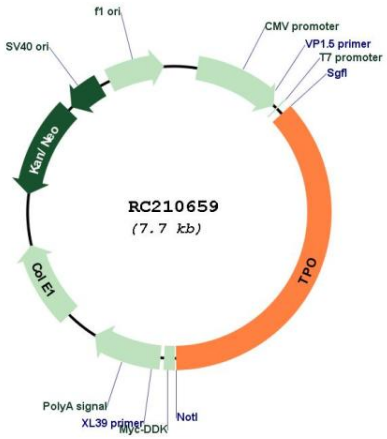
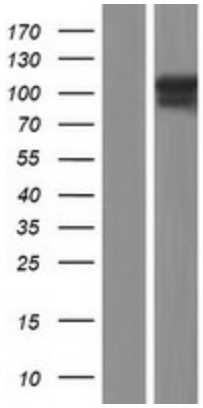
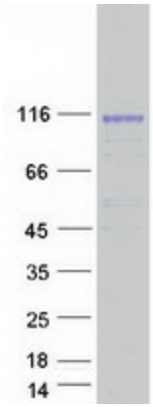
## Product images:




Circular map for RC210659




Western blot validation of overexpression lysate (Cat# [LY424648]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC210659 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).




Coomassie blue staining of purified TPO protein (Cat# [TP310659]). The protein was produced from HEK293T cells transfected with TPO cDNA clone (Cat# RC210659) using MegaTran 2.0 (Cat# [TT210002]).

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