

## Product datasheet for **RG215793**

### Melanopsin (OPN4) (NM\_001030015) Human Tagged ORF Clone

#### Product data:

|                           |                         |
|---------------------------|-------------------------|
| Product Type:             | Expression Plasmids     |
| Tag:                      | TurboGFP                |
| Symbol:                   | Melanopsin              |
| Synonyms:                 | MOP                     |
| Mammalian Cell Selection: | Neomycin                |
| Vector:                   | pCMV6-AC-GFP (PS100010) |
| E. coli Selection:        | Ampicillin (100 ug/mL)  |



**ORF Nucleotide Sequence:** >RG215793 representing NM\_001030015  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCGCGATCGCC

ATGAACCTCCTTCGGGGCCAAGAGTCCCCCAGCCCAACCAAGAGCCAGCTGCATGGCCACCCAG  
 CACCACCCAGCTGGTGGGACAGCTCCCAGAGCAGCATCTCCAGCCTGGGCCGGCTTCCATCCATCAGTCC  
 CACAGCACCTGGGACTTGGGCTGCTGCCTGGTCCCCCTCCACGTTGATGTTCCAGACCATGCCAC  
 TATACCTGGGCACAGTGATCTTGTGGTGGGACTCAGGGGATGCTGGCAACCTGACGGTCATCTATA  
 CCTTCTGCAGAGCTGTGCTTCGTGGAGTCACTGTGATGTCAGAGCAGAAGCCTCCGGACACCTGCCAA  
 CATGTTCAATTATCAACCTCGCGGTACGCACTTCTCATGTCTTCAACCAAGGCCCTGTCTTCTTACC  
 AGTAGCCTCTATAAGCAGTGGCTCTTTGGGAGACAGGCTGCGAGTTCTATGCCTTCTGTGGAGCTCTCT  
 TTGGCATTTCTCCATGATCACCTGACGGCCATCGCCCTGGACCGCTACCTGGTAATCACAGCCCCGT  
 GGCCACCTTTGGTGTGGCGTCCAAGAGCGTGCGGCATTGTCCTGCTGGGCGTTTGGCTCTATGCCCTG  
 GGCTGGAGTCTGCCACCTTCTTCGGCTGGAGCGCTACGTGCCCGAGGGGTTGCTGACATCCTGCTCCT  
 GGGACTACATGAGCTTACGCCGGCCGTGCGTGCCTACACCATGCTTCTGCTGCTTCTGTTCTTCTCT  
 CCCTGCTTATCATCATCTACTGCTACATCTTCTCATCTTCAGGGCCATCCGGGAGACAGGACGGGCTCTC  
 CAGACCTTCGGGGCCTGCAAGGGCAATGGCGAGTCCCTGTGGCAGCGGCAGCGGCTGCAGAGCGAGTGCA  
 AGATGGCCAAGATCATGCTGCTGGTATCCTCCTTCTGCTGCTCTCTGGGCTCCCTATTCCGCTGTGGC  
 CCTGGTGGCCTTTGCTGGGTACGCACACGTCCTGACACCTACATGAGCTCGGTGCCAGCCGTATCGCC  
 AAGGCCTCTGCAATCCACAACCCATCATTTACGCCATCACCCACCCCAAGTACAGGGTGGCCATTGCC  
 AGCACCTGCCCTGCCTGGGGTGTGCTGGGTGTATCACGCCGGCAGTCGCCCTACCCAGCTACCG  
 CTCCACCCACCGCTCCACGCTGACCAGCCACACCTCCAACCTCAGCTGGATCTCCATACGGAGGCCAG  
 GAGTCCCTGGGCTCGGAGAGTGAGGTGGGCTGGACACATGGAGGCAGCAGCTGTGTGGGAGCTGCC  
 AGCAAGCAAATGGGCGTCCCTCTACGGTCAGGGTCTGGAGGACTTGAAGCCAAGGCACCCCCAGACC  
 CCAGGGACACGAAGCAGAGACTCCAGGAAGACCAAGGGGCTGATCCCCAGCCAGGACCCAGGATG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:** >RG215793 representing NM\_001030015  
 Red=Cloning site Green=Tags(s)

MNPPSGPRVPPSPTQEPSCMATPAPPSWWDSSQSSISSLGRLPISISPTAPGTWAAAWVPLPTVDVPDHAH  
 YTLGTVILLVGLTGMLGNLTVIYTFCAVLRGVTMMQSRSLRTPANMFIINLAVSDFLMSFTQAPVFFT  
 SSLYKQWLFGETGCEFYAFCGALFGISSMITLTAIALDRYLVITRPLATFGVASKRRAAFVLLGVWLYAL  
 AWSLPFFGWSAYVPEGLLTSCSWDYMSFPAVRAYTMLLCCFVFFLPLLIICYIFIFRAIRETGRAL  
 QTFGACKNGESLWQRQLQSECKMAKIMLLVILLFVLSWAPYSAVALVAFAGYAHVLTPLYMSSVPAVIA  
 KASAIHNPIIYAIITHPKYRVAIAQHLPCLGVLLGVSRRHSRPYPSYRSTHRSTLTSHTSNLWSISIRRRQ  
 ESLGSESEVGWTHMEAAAVWGAAQQANGRSLYQGLEDLEAKAPRPQGHEAETPGTKGLIPSQDPRM

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

## Cloning Scheme:



**ACCN:** NM\_001030015

**ORF Size:** 1467 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.

**Note:** Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

**RefSeq:** [NM\\_001030015.2](#), [NP\\_001025186.1](#)

RefSeq Size: 2341 bp

RefSeq ORF: 1470 bp

Locus ID: 94233

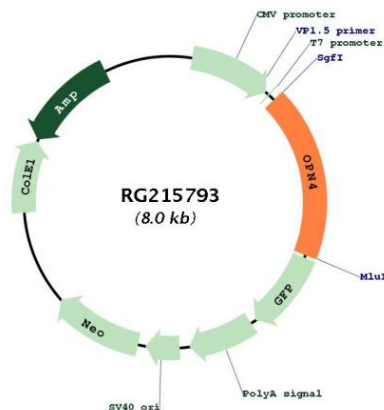
UniProt ID: [Q9UHM6](#)

Cytogenetics: 10q23.2

Protein Families: Druggable Genome, Transmembrane

**Gene Summary:** Opsins are members of the guanine nucleotide-binding protein (G protein)-coupled receptor superfamily. This gene encodes a photoreceptive opsin protein that is expressed within the ganglion and amacrine cell layers of the retina. In mouse, retinal ganglion cell axons expressing this gene projected to the suprachiasmatic nucleus and other brain nuclei involved in circadian photoentrainment. In mouse, this protein is coupled to a transient receptor potential (TRP) ion channel through a G protein signaling pathway and produces a physiologic light response via membrane depolarization and increased intracellular calcium. The protein functions as a sensory photopigment and may also have photoisomerase activity. Experiments with knockout mice indicate that this gene attenuates, but does not abolish, photoentrainment. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Jul 2008]

## Product images:



Circular map for RG215793