

Product datasheet for **RG223519**

Melanopsin (OPN4) (NM_033282) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Melanopsin (OPN4) (NM_033282) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Melanopsin
Synonyms:	MOP
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>RG223519 representing NM_033282
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCCCGCATCGCC

ATGAACCTCCTTCGGGGCCAAGAGTCCTGCCAGCCCAACCAAGAGCCAGCTGCATGGCCACCCAG
 CACCACCAGCTGGTGGGACAGCTCCCAGAGCAGCATCTCCAGCCTGGGCCGGCTTCCATCCATCAGTCC
 CACAGCACCTGGGACTTGGGCTGCTGCCTGGGTCCCCCTCCCCACGGTTGATGTTCCAGACCATGCCAC
 TATACCTGGGCACAGTGATCTTGCTGGTGGGACTCACGGGGATGCTGGGCAACCTGACGGTCATCTATA
 CCTTCTGCAGGAGCAGAAGCCTCCGGACACCTGCCAACATGTTTATTATCAACCTCGCGTCAGCGACTT
 CCTCATGTCTTACCCAGGCCCTGTCTTCTTACCAGTAGCCTCTATAAGCAGTGCGTCTTTGGGGAG
 ACAGGCTGCGAGTTCTATGCCTTCTGTGGAGCTCTTTTGGCATTCTCCATGATCACCTGACGGCCA
 TCGCCCTGGACCGCTACCTGGTAATCACACGCCCGCTGGCCACCTTTGGTGTGGCGTCCAAGAGCGGTGC
 GGCATTTGTCTGCTGGGCGTTTGGCTCTATGCCCTGGCCTGGAGTCTGCCACCCTTCTTCGGCTGGAGC
 GCCTACGTGCCCCAGGGGTTGCTGACATCCTGCTCCTGGGACTACATGAGCTTCACGCCGGCCGTGCGTG
 CCTACACCATGCTTCTCTGCTGCTTCTGTTCTTCTCCTCCTCTGCTTATCATCTACTGCTACATCTT
 CATCTTCAGGGCCATCCGGGAGACAGGACGGGCTCTCCAGACCTTCGGGGCCTGCAAGGGCAATGGCGAG
 TCCCTGTGGCAGCGGCAGCGGCTGCAGAGCAGTGCAAGATGGCCAAGATCATGCTGCTGGTCATCTCC
 TCTTCTGCTCTCTCTGGGCTCCCTATTCGCTGTGGCCCTGGTGGCCTTTGCTGGGTACGCACACGTCCT
 GACACCTACATGAGCTCGGTGCCAGCGTCATCGCCAAGGCCTCTGCAATCCACAACCCCATCATTTAC
 GCCATCACCCACCCCAAGTACAGGTGGCATTGCCAGCACCTGCCCTGCCTGGGGTGCTGCTGGGTG
 TATCACGCCGGCACAGTCGCCCCTACCCAGCTACCGCTCCACCCACGCTCCACGCTGACGAGCCACAC
 CTCCAACCTCAGCTGGATCTCCATACGGAGGCGCCAGGAGTCCCTGGGCTCGGAGAGTGAGGTGGGCTGG
 ACACACATGGAGGACAGCTGTGTGGGAGCTGCCAGCAAGCAATGGGCGTCCCTCTACGGTCAGG
 GTCTGGAGGACTTGAAGCCAAGGCACCCCCAGACCCAGGGACACGAAGCAGAGACTCCAGGGAAGAC
 CAAGGGGCTGATCCCCAGCCAGGACCCAGGATG

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>RG223519 representing NM_033282
 Red=Cloning site Green=Tags(s)

MNPPSGPRVLPSTQEPSCMATPAPPSWWSSQSSISLGRLPISPTAPGTWAAWVPLPTVDVDPDAH
 YTLGTVILLVGLTGMLGNLTVIYTFCSRSLRTPANMFIINLAVSDFLMSFTQAPVFFSSLYKQWLFGE
 TGCEFYAFCGALFGISSMITLTAIALDRYLVITRPLATFGVASKRRAAFVLLGVWLYALAWSLPPFFGWS
 AYPPEGLLTSCSWDYMSFTPAVRAYTMLLCCFVFLPLLIIICYIFIFRAIRETGRALQTFGACKNGE
 SLWQRQLQSECKMAKIMLLVILLFVLSWAPYSAVALVAFAGYAHVLTPTMSSVPAVIAKASAIHNPIIY
 AITHPKYRVAIAQHLPLGLVLLGVSRHRSRPPSYRSTHRSTLTSHTSNLSWISIRRRQESLGESEVGV
 THMEAAVWGAAQQANGRSLYGQLEDLEAKAPPRPQGHEAETPGKTKGLIPSQDPRM

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-MluI

Cloning Scheme:



ACCN: NM_033282

ORF Size: 1434 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_033282.2](#), [NP_150598.1](#)

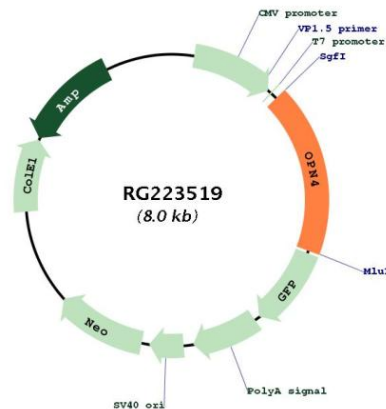
RefSeq Size: 2308 bp

RefSeq ORF: 1437 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 RG223519