

Product datasheet for **MG224963**

Opn5 (NM_181753) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Opn5 (NM_181753) Mouse Tagged ORF Clone
Tag: TurboGFP
Symbol: Opn5
Synonyms: Gpr136; Neuropsin; PGR12; TMEM13
Mammalian Cell Selection: Neomycin
Vector: pCMV6-AC-GFP (PS100010)
E. coli Selection: Ampicillin (100 ug/mL)
ORF Nucleotide Sequence: >MG224963 representing NM_181753
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGGCCTGAACCACTGCCCTACCTCAGGATGAGCGCCTGCCCACTATCTTCGAGACGAGGACCCTT
 TTGCTTCAAACCTTCTGGGAAGCGGATTTAGTGGCTGGCTTTACCTAAACAATAATCGGGATTCTCTC
 TACATTTGAAATGGGTATGCTCTTATATGCTTCTAGACGCAAGAAGAAGCTGAGACCTGCGAAATA
 ATGACTATCAATTTAGCAGTCTGTGATCTGGGGATATCAGTTGTAGGCAAGCCGTTACCATCATCTCTT
 GCTTCTGCCACCGCTGGGTGTTGGCTGGTTGGCTGCCGCTGGTATGGCTGGGCTGGATTTTCTTTGG
 CTGTGGAAGCCTGATTACCATGACTGCTGTGACGCTGGACCGCTATCTGAAGATCTGTTATCTGTCTTAT
 GGGTCTGGCTGAAGAGAAAGCATGCCTACATCTGCCTGGCAGTCATCTGGGCTTATGCTTCCTTCTGGA
 CCACCATGCCCTTGGTGGCCTGGGGACTATGCACCTGAGCCCTTCGGAACCTCATGCACCCTGGACTG
 GTGGCTGGCCAGGCTTCAGGTGGGGTTCAGGTGTTTCATCCTGAGCATCCTCTTCTGCTCCTGCTG
 CCAACGGCTGTGATTGTTTTCTCATATGCTAAGATCATCGCCAAGGTGAAGTCTTCTTAAAGAGGTAG
 CCCATTTGACAGTCGAATCCATAGCAGCCATGACTTGGAGTGAAGCTGACCAAGGTGGCAATGCTGAT
 TTGTGCTGGTTTCTGATTGCCTGGATTCTTATGCGGTCGTCTGTGTGGTCAGCTTTTGAAGGCCA
 GACTCCATCCCATACAGCTCTCCGTGGTGCACACTCCTTGCAAATCAGCAGCGATGTACAATCCAA
 TCATCTACCAGGTCATTGATTACAGATTTGCCTGTTGCCAGGCTGGTGGTTTGGAGGAACGAAGAAGAA
 ATCTTTGGAAGACTTTAGGCTGCATACTGTAACCGCAGTCAGGAAGTCTTCTGCTGTGCTGGAGATCCAT
 CCAGAGAGCAGTTCAGATTTACTAGTCCCATGTTATGGATGGAGAGGTCACAGTAATGATGGTGACT
 GTGGCAAGAAA

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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Protein Sequence: >MG224963 representing NM_181753
Red=Cloning site Green=Tags(s)

MALNHTALPQDERLPHYLREDEDPFASKLSWEADLVAGFYLTIIIGILSTFGNGYVLYMSSRRKKLRPAEI
 MTINLAVCDLGISVVGKPFITIIISCFCHRWFVGFWFGCRWYWGAGFFFGCGSLITMTAVSLDRYLKICYLSY
 GVWLKRKHAYICLAVIWAYASFWTMPLVGLGDYAPEPFGTSCTLDWLLAQASGGGQVFILSILFFCLLL
 PTAVIVFSYAKIIAKVKSSSKEVAHFDSRIHSSHVLEVKLTKVAMLICAGFLIAWIPYAVVSVWSAFGRP
 DSIPQLSVPVPTLLAKSAAMYNP.IIYQVIDYRFACCGAGLGRGTTKKSLEDFRLHTVTVAVRKSSAVLEIH
 PESSSRFTSAHVMDGESHSNDGDCGKK

TRTRPLE - GFP Tag - V

Chromatograms: https://cdn.origene.com/chromatograms/ja1725_f12.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_181753

ORF Size: 1131 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.

RefSeq: [NM_181753.4](#), [NP_861418.2](#)

RefSeq Size: 1824 bp

RefSeq ORF: 1134 bp

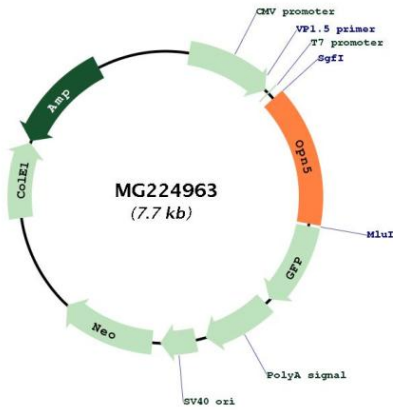
Locus ID: 353344

UniProt ID: [Q6VZZ7](#)

Cytogenetics: 17 B3

Gene Summary: G-protein coupled receptor which selectively activates G(i) type G proteins via ultraviolet A (UVA) light-mediated activation in the retina (PubMed:22043319). Preferentially binds the chromophore 11-cis retinal and is a bistable protein that displays emission peaks at 380 nm (UVA light) and 470 nm (blue light) (PubMed:22043319, PubMed:31607531). Required for the light-response in the inner plexiform layer, and contributes to the regulation of the light-response in the nerve fiber layer, via phosphorylated DAT/SLC6A3 dopamine uptake (PubMed:30936473). Involved in local corneal and retinal circadian rhythm photoentrainment via modulation of the UVA light-induced phase-shift of the retina clock (PubMed:26392540, PubMed:30240620). Acts as a circadian photoreceptor in the outer ear and vibrissal pads, via modulation of circadian clock-gene expression in response to violet light during the light-to-dark transition phase and night phase of the circadian cycle (PubMed:31607531). Required in the retina to negatively regulate hyaloid vessel regression during postnatal development via light-dependent OPN5-SLC32A1-DRD2-VEGFR2 signaling (PubMed:30936473). Involved in the light-dependent regulation of retina and vitreous compartment dopamine levels (PubMed:30936473).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG224963