

Product datasheet for **RG208454**

SFPQ (NM_005066) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	SFPQ (NM_005066) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	SFPQ
Synonyms:	POMP100; PPP1R140; PSF
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>RG208454 representing NM_005066
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTGCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGTCTCGGGATCGGTTCCGGAGTCGTGGCGGTGGCGGTGGTGGCTTCCACAGGCGTGGAGGAGGCGGCG
 GCCGCGGCGGCCCTCCACGACTTCCGTTCTCCGCGCCCGGCATGGGCCTCAATCAGAATCGCGGCCCAT
 GGGTCTGGCCCGGGCCAGAGCGGCCCTAAGCCTCCGATCCCGCCACCGCCTCCACACCAACAGCAGCAA
 CAGCCACCACCGCAGCAGCCACCGCCGAGCAGCCGCCACCGCATCAGCCGCGCCGCATCCACAGCCGC
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 CGCTCCCGGAGTAGGCAGCGCACCACCAGCCTCCAGCTCGGCCCGCCGCACTCCACCAACCTCGGGG
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 CGCCGCCACCCACCCGCAAGCAGCGGGTCCCTACCACACCTCCTCAGGCCGAGGCCCGCCGCTCC
 GCCCGCGCAGTCCCGGCCCGGGTCCAGGGCCTAAGCAGGGCCAGGTCGGGTGGTCCAAAGGCGGC
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 CGCATCGAGGCGGCGGGAGCCCGGGGGCCGCCAGCACCACCCGCCCTACCACCAGCAGCATACCA
 GGGGCCCGCCCGCGGGCCCGCGGCCGAGGAGAAGATCTCGGACTCGGAGGGGTTTAAAGCC
 AATTTGTCTCTTGGAGAGGCTGGAGAGAAACTTACACACAGCGATGTCGGTGTGTTGTTGGGAATC
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 TATCAACAAAGGCAAAGGATTCGGATTTATTAAGCTTGAATCTAGAGCTTTGGCTGAAATTGCCAAAGCC
 GAAGTGGATGATACCCCATGAGAGGTAGACAGCTTCGAGTTCGCTTTGCCACACATGCTGCTGCCCTTT
 CTGTTTCGTAATCTTTCACCTTATGTTTCCAATGAACTGTTGGAAGAAGCCTTTAGCCAATTTGGTCTTAT
 TGAAAGGGCTGTTGTAATAGTGGATGATCGTGAAGATCTACAGGGAAAGGCATTGTTGAATTTGCTTCT
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 CAGTCATTGTGGAACCACTTGAACAAGTAGATGATGAAGATGGTCTTCTGAAAACTTGCCAGAAAGAA
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 AAGAGACATGCGAATGGGTGGCGGAGGACAATGAACATGGGAGATCCCTATGGTTCAGGAGGCCAGAAA
 TTTCCACCTCTAGGAGGTGGTGGTGGCATAGGTTATGAAGCTAATCCTGGCGTTCACCAGCAACCATGA
 GTGGTTCCATGATGGGAAGTGACATGCGTACTGAGCGCTTTGGGCAGGAGGTGCGGGCCCTGTGGGTGG
 ACAGGGTCTAGAGGAATGGGGCCTGGAAGTCCAGCAGGATATGGTAGAGGGAGAGAAGAGTACGAAGGC
 CCAAACAAAAACCCCGATTT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >RG208454 representing NM_005066
 Red=Cloning site Green=Tags(s)

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MSRDRFRSRGGGGGFHRRGGGGGRGLHDFRSPPPMGLNQNRPMPGPGQSGPKPIPPPPPHQQQQ
QPPPQQPPPQQPPPHQPPHPQPHQQQPPPPQDSSKPVVAQGPAPGVSAPPASSSAPPATPPTSG
APPGSGPGTPTPPPAVT SAPPGAPPPTPPSSGVPTTPPQAGGPPPPAAVPGPGPKQGGPGGPKGG
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NLSLLRRPGEKTYTQRCRLFVGNLPADITEDEFKRLFAKYGEPGEVFINKGKGFIFIKLESRALAEIAKA
ELDDTPMRGRQLRVRFATHAAALSVRNLSYVSNELLEAFSQFGPIERAVVIVDDRGRSTGKGI VEFAS
KPAARKAFERCSEGVFLLTTTPRPVIVEPLEQLDDEDGLPEKLAQKNPMYQKERETPPRF AQHGTFEY EY
SQRWKSLEMEKQQREQVEKNMKDAKDKLESEMEDAYHEHQANLLRQDL MRRQEELRMEELHNQEMQKR
KEMQLRQEEERRRREEMMIRQREMEEQMRQREESYSRGMYPDRMRMGGGGAMNMGDPYSGGGQK
FPPLGGGGIGYEANPGVPPATMSGSMGSDMRTERFGQGGAGPVGGQGP RGMGPTAGYGRGREEYEG
PNKKPRF
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TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



ACCN: NM_005066

ORF Size: 2121 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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_005066.3](#)

RefSeq Size: 3073 bp

RefSeq ORF: 2124 bp

Locus ID: 6421

UniProt ID: [P23246](#)

Cytogenetics: 1p34.3

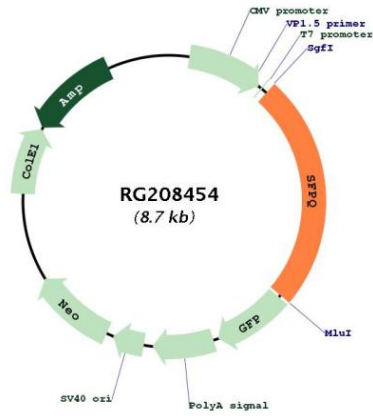
Domains: RRM

Protein Families: Transcription Factors

Gene Summary:

DNA- and RNA binding protein, involved in several nuclear processes. Essential pre-mRNA splicing factor required early in spliceosome formation and for splicing catalytic step II, probably as a heteromer with NONO. Binds to pre-mRNA in spliceosome C complex, and specifically binds to intronic polypyrimidine tracts. Involved in regulation of signal-induced alternative splicing. During splicing of PTPRC/CD45, a phosphorylated form is sequestered by THRAP3 from the pre-mRNA in resting T-cells; T-cell activation and subsequent reduced phosphorylation is proposed to lead to release from THRAP3 allowing binding to pre-mRNA splicing regulatory elements which represses exon inclusion. Interacts with U5 snRNA, probably by binding to a purine-rich sequence located on the 3' side of U5 snRNA stem 1b. May be involved in a pre-mRNA coupled splicing and polyadenylation process as component of a snRNP-free complex with SNRPA/U1A. The SFPQ-NONO heteromer associated with MATR3 may play a role in nuclear retention of defective RNAs. SFPQ may be involved in homologous DNA pairing; in vitro, promotes the invasion of ssDNA between a duplex DNA and produces a D-loop formation. The SFPQ-NONO heteromer may be involved in DNA unwinding by modulating the function of topoisomerase I/TOP1; in vitro, stimulates dissociation of TOP1 from DNA after cleavage and enhances its jumping between separate DNA helices. The SFPQ-NONO heteromer binds DNA (PubMed:25765647). The SFPQ-NONO heteromer may be involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination and may stabilize paired DNA ends; in vitro, the complex strongly stimulates DNA end joining, binds directly to the DNA substrates and cooperates with the Ku70/G22P1-Ku80/XRCC5 (Ku) dimer to establish a functional preligation complex. SFPQ is involved in transcriptional regulation. Functions as transcriptional activator (PubMed:25765647). Transcriptional repression is mediated by an interaction of SFPQ with SIN3A and subsequent recruitment of histone deacetylases (HDACs). The SFPQ-NONO-NR5A1 complex binds to the CYP17 promoter and regulates basal and cAMP-dependent transcriptional activity. SFPQ isoform Long binds to the DNA binding domains (DBD) of nuclear hormone receptors, like RXRA and probably THRA, and acts as transcriptional corepressor in absence of hormone ligands. Binds the DNA sequence 5'-CTGAGTC-3' in the insulin-like growth factor response element (IGFRE) and inhibits IGF-I-stimulated transcriptional activity. Regulates the circadian clock by repressing the transcriptional activator activity of the CLOCK-ARNTL/BMAL1 heterodimer. Required for the transcriptional repression of circadian target genes, such as PER1, mediated by the large PER complex through histone deacetylation (By similarity). Required for the assembly of nuclear speckles (PubMed:25765647). Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway (PubMed:28712728).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for RG208454