

## Product datasheet for **RG223580**

### **RASGRF2 (NM\_006909) Human Tagged ORF Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	RASGRF2 (NM_006909) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	RASGRF2
Synonyms:	GRF2; RAS-GRF2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG223580 representing NM_006909 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCAGAAGAGCGTGGCTACAACGAGGGGCACGCCCTGTACCTGGCCTTTCTGGCGCGCAAGGAGGGCA  
CCAAGCGCGGCTTCTGAGTAAGAAGACGGCCGAGGCGAGCCGCTGGCACGAGAAGTGGTTCGCCCTCTA  
CCAGAATGTGCTTTCTACTTCGAGGGCGAGCAGAGCTGCCGCCCGGGCGGCATGTACCTCTGGAGGGC  
TGCAGCTGCGAACGAACGCCCGCCACCCAGGGCCGGCGGGCAGGGAGGCGTCCGAGACGCGCTGG  
ACAAGCAGTATTACTTTACTGTTCTTTTGGCCATGAAGGTCAGAAGCCACTGGAGCTGCGCTGTGAGGA  
GGAGCAGGATGGTAAAGAGTGGATGGAGGCCATTCACCAAGCCAGTTATGCAGACATTTTGATTGAGAGG  
GAAGTATTAATGCAGAAGTACATTCATCTAGTTTCAGATCGTAGAGACAGAAAAATTGCAGCTAACCAAC  
TCCGACATCAACTGAAGATCAAGACACAGAAATCGAAAGGCTTAAATCAGAGATTATTGCTCTTAATAA  
AACCAAGAACGAATGCGACCTTACCAAGCAACCAAGAAGACGAAGATCCAGACATCAAGAAGATTA  
AAGGTTTCAGAGCTTCATGCGAGGATGGTGTGCAGAAGGAAATGGAAGACCATCGTGCAGGATTACATTT  
GTTCTCCTCATGCTGAAAGTATGAGGAAGAGAAACCAGATTGTGTTCCACCATGGTGGAGGCAGAGTCAGA  
GTACGTTCCACAGCTCTACATCTGGTCAATGGCTTTTCCGGCCCTGCGTATGGCCGCCAGCTCCAAG  
AAGCCCCATCAGCCACGACGCTCAGCAGTATTTTTCTAACAGTGAACAATCATGTTTCTTCATG  
AAATATTTTCATCAAGGACTAAAGGCAAGGATAGCAAACTGGCCACTTTAATTTTAGCTGATCTGTTTGA  
TATTTTGTCCCCATGCTGAACATTTATCAAGAATTTGTGCGTAATCACCAGTACAGCCTGCAAGTTCTC  
GCCAATTGTAAGCAAAACAGAGATTTTGACAACTCTTAAACAGTATGAAGCCAATCCAGCCTGTGAGG  
GGAGGATGCTGGAGACATTCTTGACCTATCCCATGTTTCAGATCCCAGATATATCATCACACTCCATGA  
GCTCCTTGCTCACACACCCCATGAGCATGTGAAAGGAAAAGCCTGGAGTTTGCCAAATCAAAGCTAGAG  
GAACTATCCAGAGTAATGCACGATGAAGTCAGCGACACTGAAAACATAAGGAAAAACCTTGCCATCGAAA  
GAATGATCGTGGAGGGCTGTGACATCTTCTGGACACCAGCCAAACGTTTCATCCGCAAGGTTCTCTTAT  
TCAAGTACCTTCGTTGAGAGGGGAAACTTAGTAAAGTTCGCCCTGGGTTGCTTGTGAAAAAGGAA



[View online »](#)

GGAGAGAGACAATGCTTCTTATTTACAAAACTTTTTAATATGTACAAGAAGTTCAGGAGGGAAGCTTC  
 ATCTGCTCAAGACAGGTGGGGTTCTGTCTCTAATAGACTGCACATTGATTGAGGAGCCAGATGCAAGCGA  
 TGATGACTCTAAAGTTCTGGGCAAGTGTGGGCACCTGGATTTAAAAATAGTGGTGGAGCCTCCTGAC  
 GCTGCCGCTTCACTGTTGTCTTGTAGCACCTCACGCCAGGAGAAAGCTGCCTGGATGAGTGACATCA  
 GTCAGTGTGTGGACAATACGATGTAATGGTTAATGACTATAGTGTGAAGAGAATCCAAAGTCAC  
 TGTGCCACATGATTAAGTCTGATGCCCGTCTCATAAAGACGACACTGACATTTGCTTCAGTAAAAA  
 CTTCAACTCCTGCAAAGTGCCCCAGATCCGTTATGCCAGCGTGGAGCGCCTCTTGGAACGACTGACAGACT  
 TGCGGTTTTCTTAGTATTGATTTCTCAACACCTTCTGCACACCTATCGTATTTTCACTACTGCCGCTGT  
 GGTGCTGGGAAACTCTCCGACATATACAAGAGGCCTTTCACCTCCATCCCTGTCAAGTCAATTGGAATTG  
 TTTTTGCTACCAGCCAGAACAACAGAGGTGAACATTTGGTGGATGGCAAATCCCCACGTCTGTGTGCGA  
 AATTCTTCCCCGCCACTGGCTGTGTCCAGAACATCTTCCCAGTGAGGGCCAGAAAGCTGTCTTT  
 GACTTCTCCCTTGAACCTCAAAGATAGGAGCATTGGACCTGACAACTTCCAGCAGTCCCACCACCACC  
 CAGAGTCCCGCTGCGTCTCCACCACCACACTGGTCAGATACCCTGGATCTCAGCAGAGGCCTCTCTT  
 CTCCAGAGCAAAGCCCGGAACGGTAGAAGAGAATGTCGATAACCCACGCGTGGATCTGTGTAACAAGCT  
 AAAACGAAGTATCAAAAAGCAGTCTAGAGTCTGCACCAGCGGACCGAGCAGGAGTGGAAAGCTCCCT  
 GCAGCGGACACCACAGAACTTTACCTTGAGATCCCCCTCAACTCCTCGGCACCTCCGCTATCGACAGC  
 CTGGAGGACAGACGGCGGACAATGCCCACTGCTCTGTTTACCGGCTTCTGCTTTTGAATAGCCACAGC  
 TGCAGCAGGACATGGGAGTCCACCAGGCTTAAACAACCCGAGAGAACATGTGATAAAGAGTTTATTATA  
 CGGAGAACGGCTACCAATCGAGTCTGAACGCTCTCCGCTCACTGGGTCTCAAAGCACGCACAGGATTTG  
 AACTCAACAATGAACTAAAGATGAATGTCTAAATTTGCTAGAAGAAGTTTTGCGAGACCCAGACCTTCT  
 TCCCCAAGAAAGGAAAGCCCGCGAATATCCTCAGGGCCCTTTCACAAGATGACCAAGATGACATCCAC  
 CTAAAATTAGAGGATATAATTCAAATGACTGACTGCATGAAGGCCGAATGCTTTGAGTCTTGTGCGCCA  
 TGGAGCTGGCAGAACAGATCACCTCCTGGACCATGTCATTTTTCAGAAGCATTCCCTACGAGGATTTCT  
 TGGGCAGGGGTGGATGAAGCTGGATAAAAACGAAAGAATCCTTACATTATGAAAACCAGCCAACACTTC  
 AATGACATGAGTAACCTGGTGGCTCCCAGATAATGAACTATGCTGATGTGAGTCCCCTGCCAACGCCA  
 TCGAGAAATGGGTGGCAGTGGCGGACATCTGCCGATGCCTGCACAACACAACGGCGTGTGGAGATCAC  
 CTCGGCTTAAACAGAAGTGCCATCTACAGGCTGAAGAAAACCTGGGCCAAGGTCTCTAAGCAGACAAAA  
 GCTCTAATGGACAACTTCAAAGACTGTTTCTCTGAAGGAAGATTTAAAAATCTTAGAGAAACCTTA  
 AAAATTGTAACCCTCCTGCAGTTCCTTATCTTGGGATGACTTGCAGACCTGGCATTATTGAAGAAGG  
 AACACCAAATTTACTGAGGAAGCCTTGTCAATTTCTCCAAAATGAGAATGATATCACACATCATCAGA  
 GAGATACGCCAGTCCAGCAGACTTCTACAGAATAGATCATCAGCCAAAGGTGCACAGTACTTGCTTG  
 ACAAAAGACCTTATCATAGATGAAGATACGCTATATGAGCTGTCACTAAAAATTGAACCTCGACTCCCTGC  
 T

ACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:** >RG223580 representing NM\_006909  
 Red=Cloning site Green=Tags(s)

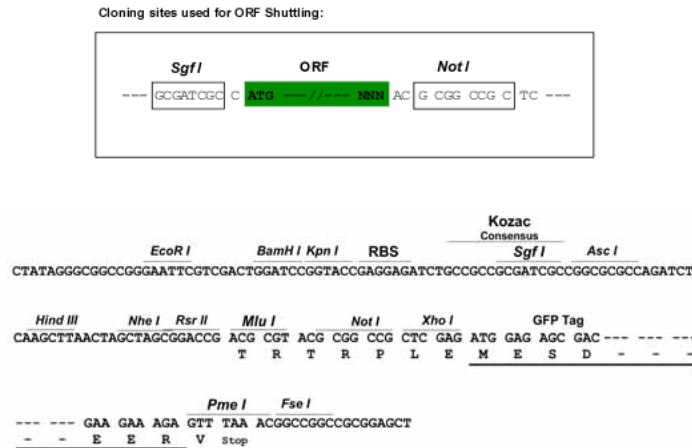
```

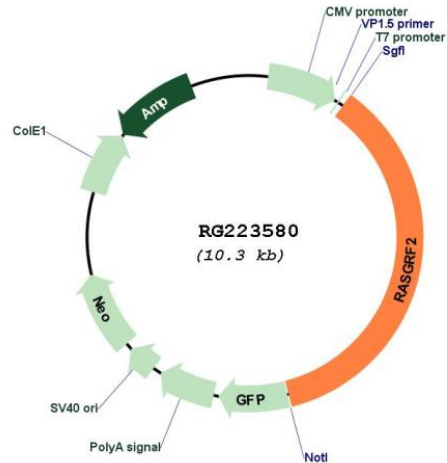
MQKSVRYNEGHALYLAFARKEGTRKGFSLSKTAEASRWHEKWFALYQNVLFYFEGEQSCRPA
MYLLEG CSCERTPAPPAGAGQGGVVDALDKQYYFTVLFHGEGQKPLELRCEEEQDGKEWME
AIHQASYADILIER EVLMQKYIHLVQIVETEKIAANQLRHQLEDQDTEIERLKSEIIALNKT
KERMRYQSNQDEDPDIKKIK KVQSFMRGWLCCRKWKTIQDYICSPHAESMRKRNIQIVFTM
VEAESEYVHQLYLILVNGFLRPLRMAASSK KPPISHDDVSSIFLNSETIMFLHEIFHQGL
KARIANWPTLILADLFDILLPMLNIYQEFVRNHQYSLQVL ANCKQNRDFDKLLKQYEANPA
CEGRMLETFLTYPMFQIPRYIITLHELLAHTPHEHVERKSLEFAKSKLE ELSRVMHDEVS
DTENIRKNLAIERMIVEGCDILLDTSQTFIRQGS LIQVPSVERGKLSKVRGLSLSLKKKE
GERQCFLFTKHLICTRSSGGKLHLKLTGGVLSLIDCTLIEEPDASDDDSKSGSQVFGHLD
FKIVVEPPD AAFTVLLAPSRQEKAAWMSDISQVDNIRCNGMLTIVFEENSKVTVPHMIK
SDARLHKDDTDICFSKT LNSCKVPQIRYASVERLLERLTDLRFLSIDFLNTFLHTYRIF
TTAAVVLGKLSDIYKRPFTSIPVRSLEL FFATSQNNRGEHLVDGKSPRLCRKFSPPPL
AVSRTSSPVRARKLSLTSPLNSKIGALDLTSSSPTTTT QSPAASPPPHTGQIPLDL
SRGLSSPEQSPGTVEENVNPRVDLCNKLKRSIQKAVLESAPADRAGVESSP AADTTEL
SPCRSPSTPRHLRYRQPGGTADNAHCSVSPASAFIAIATAAAGHGSPPGFNNTERTCD
KEFII RRTATNRVLNVLRHVSKHAQDFELNNELKMNVLNLEEVL RDPDLLPQERKAA
ANILRALSQDDQDDIH LKLEDIIQMTDCMKAECFESLAMELAEQITLLDHVIFRSIPY
EEFLGGQWMLDKNERTPYIMKTSQHF NDMSNLVASQIMNYADVSSRANAIEKWVAVAD
ICRCLHNYNGVLEITSALNRS AIYRLKKTWAKVSKQTK ALMDKLQKTVSSEGRFKNL
RETLKNCNPPAVPYLGMYL TDLAFIEEGTPNFTEEGLVNF SKMRMISHIIR EIRQF
QQTSYRIDHQPKVAQYLLDKDLIDEDTL YELSLKIEPRLPA
  
```

TRPLE - GFP Tag - V

**Restriction Sites:** SgfI-NotI

**Cloning Scheme:**



**Plasmid Map:**


**ACCN:** NM\_006909

**ORF Size:** 3711 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\\_006909.3](#)

**RefSeq Size:** 4078 bp

**RefSeq ORF:** 3714 bp

**Locus ID:** 5924

**UniProt ID:** [O14827](#)

**Cytogenetics:** 5q14.1

**Protein Pathways:** MAPK signaling pathway

**Gene Summary:** RAS GTPases cycle between an inactive GDP-bound state and an active GTP-bound state. This gene encodes a calcium-regulated nucleotide exchange factor activating both RAS and RAS-related protein, RAC1, through the exchange of bound GDP for GTP, thereby, coordinating the signaling of distinct mitogen-activated protein kinase pathways. [provided by RefSeq, Oct 2011]