

## Product datasheet for **MG220913**

### **PIk2 (NM\_152804) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	PIk2 (NM_152804) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	PIk2
Synonyms:	Snk
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG220913 representing NM\_152804  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGAGCTCCTGCGGACTATCACCTACCAGCCGGCCGCCGACCAAGATGTGCGAGCAGGCTCTGGCA  
 AAGCTTTCGGCGGGGACTCAAAGAAGAAGCGACCACAGCAGCCTTCTGAAGATGGGCAGCCCAAGCCCA  
 GGTGACCCCGGGCGCCCGCACCACCATTCCCACTCGGGACCCGAGATCTCGCGGATTATA  
 GTCGACCCACGACGGGAAGCGCTACTGCCGGGGCAAAGTGTGGGCAAGGGTGGATTTGCAAAGTGT  
 ACGAAATGACAGATCTGACAAACAACAAGTCTACGCTGCAAAAATTATTCCTCACAGCAGAGTAGCTAA  
 ACCTCATCAGAGGGAAAAGATCGACAAAGAAATCGAGCTTCACAGACTACTGCACCATAAGCATGTCGTG  
 CAGTTTTACCACTACTTTGAAGACAAAGAAAACATTTACATTCTTTGGAATACTGCAGTAGAAGGTCCA  
 TGGCTCACATCTTGAAAGCAAGAAAGGTGTTGACAGAGCCAGAAGTCCGATACTACCTCAGGAGATTGT  
 GTCAGGACTCAAGTATCTTCACGAACAAGAAATCTTGACAGGGATCTCAAGCTAGGGAACCTTTATTATT  
 AATGAAGCCATGGAGCTGAAGGTGGGAGACTTTGGTTTGGCAGCCAGACTGGAACCACTGGAACACAGAA  
 GGAGAACAATATGTGGAACCCCAATTATCTCTCCCCGAAGTCTCAACAAACAAGGACACGGCTGTGA  
 ATCAGACATCTGGGCCTTAGGCTGTGTAATGTATACGATGCTGCTAGGAAGACCTCCATTCGAAACCACA  
 AATCTGAAAGAAACGTACAGGTGCATAAGGGAAGCAAGGTATACCATGCCGTCCTCATTGCTGGCCCTG  
 CTAAGCACTTGATAGCTAGCATGCTGTCCAAAAACCCAGAGGACCCGCCCCAGTTTGGATGACATCATTCC  
 GCATGACTTCTTCTGCAGGGTTTCACTCCGGACAGACTCTTCCAGCTGTTGCCACACAGTCCAGAT  
 TTCCACTTGTCAAGCCCAGCCAAGAATTTCTTTAAGAAAGCCGACGCCGCTCTTTTTGGTGGCAAGAAGG  
 ACAAAACAAGATATAACGACACACACAATAAGGTGTCTAAGGAAGATGAAGACATTTACAAGCTTCGGCA  
 TGATTTGAAGAAAAGTGTGATAAACCAGCAGCCTAGCAAAACACAGAGCAGACGAGGAGCCCCAGCCGCT  
 CCCACTACTGTTGCCAGATCTGGAACGTCCGAGTGAAAAACAACAGCAGATTGGGGATGCAATCCGGA  
 TGATAGTCAGGGGGACTCTCGGCAGCTGCAGCAGCAGCAGCAATGCCTTGAAGACAGCACCATGGGAAG  
 TGTTGCAGACACAGTGGCAAGAGTCCTTCGAGGATGTCTAGAAAACATGCCGGAAGCTGACTGTATCCCC  
 AAAGAGCAGCTGAGCACGTCTTTCAGTGGGTACCAAGTGGGTGACTACTCCAACAAATATGGCTTTG  
 GGTACCAGCTCTCGACCACACTGTTGGCGTCTTTTCAACAACGGGGCTCACATGAGCCTCTTCCGGA  
 CAAAAAGACAGTTCACTATTATGCGGAACCTGGCCAATGCTCTGTTTTCCAGCAACAGATGCCCTGAA  
 CAATTTATTAGTCAAGTGACGGTGTGAAATACTTTTCTATTACATGGAGGAGAACCTCATGGATGGTG  
 GTGATCTCCCGAGTGTTACTGACATTCGAAGACCTCGGCTCTACCTCCTGCAAGTGTAAAGTCTGATAA  
 AGCCTTAATGATGCTCTTCAATGACGGCACATTTAGGTGAATTTCTACCACGATCATACAAAAATCATC  
 ATCTGTAACCAGAGTGAAGAATACCTTCTCACCTACATCAATGAGGACAGGATCTCTACAACCTTTCAGAC  
 TGACGACTCTGCTGATGCTGGCTGTTCGTTAGAATTGAAAAATCGAATGGAATATGCCCTGAACATGCT  
 CTTACAGAGATGTAAC

**ACGCGT**ACGCGGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:** >MG220913 representing NM\_152804  
 Red=Cloning site Green=Tags(s)

MELLRTITYQPAAGTKMCEQALGKACGGDSKKRPPQPSSEGGQPQAQVTPAAPHHHHHSHSGPEISRRI  
 VDPTTGKRYCRGKVLGKGGFACQYEMDLTNNKVYAALIPHSRVAKPHQREKIDKEIELHRLHHKHVV  
 QFYHYFEDKENIYILLEYSRRSMAHILKARKVLTEPEVRYLRQIVSGLKYLHEQEILHRDLKLGNFII  
 NEAMELVGDFGLAARLEPLEHRRRTICGTPNYLSPEVLNKQGHGCESDI WALGCVMYTMLLGRPPFETT  
 NLKETYRCIREARYTMPSSLLAPAKHLIASMLSKNPEDRPSLDDIIRHDFFLQGF TPDRLSSSCCHTVPD  
 FHLSSPAKNFFKKAALFSGKKDKARYNDTHNKVSKEDEDIYKLRHDLKVKVITQQPSKHRADDEEPQP  
 PTTVARSGTSAVENKQIQDAIRMIVRGTLGSCSSSECELEDSTMGSVADTVARVLRGCLENMPEADCIP  
 KEQLSTSFQWTKWDYSNKYGFYQLSDHTVGVLFNNGAHMSLLPDKKT VHYYAELGQCSVFPATDAPE  
 QFISQVTVLKYF SHYMEENLMDGGDLPSVTDIRRPRLYLLQWLKSDKALMMLFNDGTFQVNFYHDHTKII  
 ICNQSEYLLTYINEDRISTTFRLTLLMSGCSLELKNRMEYALNMLLQRCN

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_152804

**ORF Size:** 2046 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](mailto: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\\_152804.1](#)

**RefSeq Size:** 2802 bp

**RefSeq ORF:** 2049 bp

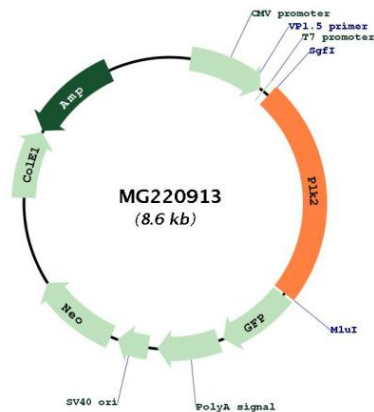
**Locus ID:** 20620

**UniProt ID:** [P53351](#)

**Cytogenetics:** 13 D2.1

**Gene Summary:**

Tumor suppressor serine/threonine-protein kinase involved in synaptic plasticity, centriole duplication and G1/S phase transition. Polo-like kinases act by binding and phosphorylating proteins that are already phosphorylated on a specific motif recognized by the POLO box domains. Phosphorylates CENPJ, NPM1, RAPGEF2, RASGRF1, SNCA, SIPA1L1 and SYNGAP1. Plays a key role in synaptic plasticity and memory by regulating the Ras and Rap protein signaling: required for overactivity-dependent spine remodeling by phosphorylating the Ras activator RASGRF1 and the Rap inhibitor SIPA1L1 leading to their degradation by the proteasome. Conversely, phosphorylates the Rap activator RAPGEF2 and the Ras inhibitor SYNGAP1, promoting their activity. Also regulates synaptic plasticity independently of kinase activity, via its interaction with NSF that disrupts the interaction between NSF and the GRIA2 subunit of AMPARs, leading to a rapid rundown of AMPAR-mediated current that occludes long term depression. Required for procentriole formation and centriole duplication by phosphorylating CENPJ and NPM1, respectively. Its induction by p53/TP53 suggests that it may participate in the mitotic checkpoint following stress.[UniProtKB/Swiss-Prot Function]

**Product images:**

Circular map for MG220913