

## Product datasheet for **MG204911**

### Six3 (NM\_011381) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Six3 (NM_011381) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Six3
Synonyms:	E130112M24Rik; Six3a; Six3alpha; Six3b; Six3beta
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG204911 representing NM_011381 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGTATTCGGCTCCCCCTAGATCTCTATTCTCCCACTTCTTGTGGCCAACTTCGCCGATTCTCACC  
ACTGCTCCCTACTTCTGGCGAGTAGCGGCGGGGAGCGGTGCGAGCGGCGGGCGGGCGGGGAGG  
AGGCGGCGGGGAACCGTGC GGAGGGCGGGTCTGGCGGAGCAGGCGGCGGAGCGGGCGGGGAGG  
TCCAGGGCCCCCGGAAGAGTTGTCCATGTTCCAGTTGCCACCCTCACTTCTCGCCGAGCAGGTGG  
CCAGCGTCTGCGAGACGCTGGAGGAGACGGGCGACATCGAGCGGCTGGGCGCTTCTCTGGTCGTCGCC  
CGTGGCCCCGGGCGTGCAGGGCCATCAACAAACACGAGTCGATCCTGCGCGCGCGCTGTCGTCGCC  
TTCCACACCGGCAACTTCCGCGACCTGTACCACATCCTGGAGAACCACAAGTTCACTAAGGAGTCTCAGG  
GCAAGTGCAGGCAAGTGTGGCTCGAGGCGCACTACCAGGAGGCCGAGAAGCTGCGCGGCCCGCGCTCGG  
CCCCGTGGACAAGTACCGCGTGCAGGAAGTTCCCTCTGCCGCGACCATCTGGGATGGCGAGCAGAAG  
ACCCATTGCTTCAAGGAGCGGACTCGGAGCCTGCTGCGGGAGTGGTACCTGCAGGATCCCTACCCCAACC  
CCAGCAAGAAACGGAAGTGGCGCAGGCCACCGGCTCACCCACACAAGTAGGCAACTGGTTTAAAGAA  
CCGGCGACAGCGGACCGCGCAGCGGCGGCAAGAAGAGGCTCCAGCATCAGGCCATCGGGCCGAGCGGG  
ATGCGCTCGCTGGCCGAGCCCGCTGCCACGCACGGCTCAGCAGAGTACCCGTCACGGCGGCCAGCC  
CGACCACAGTGTGTCCAGCCTGACGGAGCGCGGACACCGGCACTTCGATCCTCTCGGTAACCTCCAG  
CGACTCGGAATGTGATGTA

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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**Protein Sequence:** >MG204911 representing NM\_011381  
 Red=Cloning site Green=Tags(s)

```
MVFRSPLDLYSSHFLLPNFADSHHCSLLLASSGGGSGASGGGGGAGGGGGGNRAGGGGAGGAGGSGGGG
SRAPPEELSMFQLPTLNF SPEQVASVCETLEETGDIERLGRFLWSLPVAPGACEAINKHESILRARAVVA
FHTGNFRDLYHILENHKFTKESHGKLQAMWLEAHYQEAELRGRPLGPVDKYRVRKKFPLPRTIWDGEQK
THCFKERTRSLLEWYLQDPYPNPSKKRELAQATGLTPTQVGNWFKNRRQRDRAAAAKNRLQHQAIGPSG
MRSLAEPGCPTHGSAESPSTAASPTTSSVSSLTERADTGTSSILSVTSSDSECDV
```

TRTRPLE - GFP Tag - V

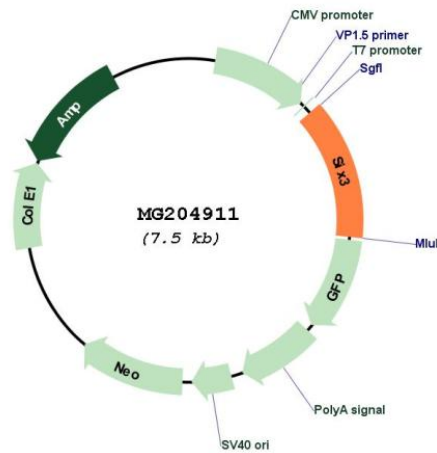
**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shuttling:



**Plasmid Map:**



**ACCN:** NM\_011381

**ORF Size:** 999 bp

<b>OTI Disclaimer:</b>	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. <a href="#">More info</a>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_011381.4</a> , <a href="#">NP_035511.2</a>
<b>RefSeq Size:</b>	3680 bp
<b>RefSeq ORF:</b>	1002 bp
<b>Locus ID:</b>	20473
<b>UniProt ID:</b>	<a href="#">Q62233</a>
<b>Cytogenetics:</b>	17 55.42 cM

**Gene Summary:**

Transcriptional regulator which can act as both a transcriptional repressor and activator by binding a ATTA homeodomain core recognition sequence on these target genes. During forebrain development represses WNT1 expression allowing zona limitans intrathalamica formation and thereby ensuring proper antero-posterior patterning of the diencephalon and formation of the rostral diencephalon (PubMed:18094027). Acts as a direct upstream activator of SHH expression in the rostral diencephalon ventral midline and that in turn SHH maintains its expression (PubMed:18775421). In addition, Six3 activity is required for the formation of the telencephalon. During postnatal stages of brain development is necessary for ependymal cell maturation by promoting the maturation of radial glia into ependymal cells through regulation of neuroblast proliferation and migration (PubMed:22071110). Acts on the proliferation and differentiation of neural progenitor cells through activating transcription of CCND1 AND CCND2 (PubMed:17576749). During early lens formation plays a role in lens induction and specification by activating directly PAX6 in the presumptive lens ectoderm (PubMed:17066077). In turn PAX6 activates SIX3 resulting in activation of PDGFRA and CCND1 promoting cell proliferation (PubMed:12072567). Also is required for the neuroretina development by directly suppressing WNT8B expression in the anterior neural plate territory (PubMed:20890044). Its action during retina development and lens morphogenesis is TLE5 and TLE4-dependent manner. Furthermore, during eye development regulates several genes expression. Before and during early lens development represses the CRYGF promoter by binding a SIX repressor element (PubMed:11139622). Directly activates RHO transcription, or cooperates with CRX or NRL (PubMed:17666527). Six3 functions also in the formation of the proximodistal axis of the optic cup (PubMed:12163408), and promotes the formation of optic vesicles-like structures (PubMed:11458394). During pituitary development, acts in parallel or alternatively with HESX1 to control cell proliferation through Wnt/beta-catenin pathway (PubMed:18694563). Plays a role in eye development by suppressing WNT1 expression and in dorsal-ventral patterning by repressing BMP signaling pathway (By similarity).[UniProtKB/Swiss-Prot Function]