

## Product datasheet for **RG226623**

### SMAD2 (NM\_001135937) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	SMAD2 (NM_001135937) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	SMAD2
Synonyms:	hMAD-2; hSMAD2; JV18; JV18-1; MADH2; MADR2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG226623 representing NM_001135937 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGTCGTCATCTTGCCATTCACGCCGCCAGTTGTGAAGAGACTGCTGGGATGGAAGAAGTCAGCTGGTG  
GGTCTGGAGGAGCAGGCCGAGGAGAGCAGAATGGGCAGGAAGAAAAGTGGTGTGAGAAAGCAGTGAAAAG  
TCTGGTGAAGAAGCTAAAGAAAACAGGACGATTAGATGAGCTTGAGAAAGCCATCACCCTCAAAGTGT  
AATACTAAATGTGTACCATAACCAAGTCTCTTGATGGTCGTCTCCAGGTATCCCATCGAAAAGGATTGC  
CACATGTTATATATTGCCGATTATGGCGCTGGCCTGATCTTACAGTCATCATGAACTCAAGGCAATTGA  
AAACTGCGAATATGCTTTAATCTTAAAAAGGATGAAGTATGTGTAACCCCTTACCCTATCAGAGAGTT  
GAGACACCAGTTTTGCCTCCAGTATTAGTGCCCGACACACCGAGATCCTAACAGAACTCCGCCTCTGG  
ATGACTATACTCACTCCATTCCAGAAAACACTAACTTCCCAGCAGGAATTGAGCCACAGAGTAATTATAT  
TCCAGAAACGCCACCTCCTGGATATATCAGTGAAGATGGAGAAACAAGTGACCAACAGTTGAATCAAAGT  
ATGGACACAGGCTCTCCAGCAGAACTATCTCTACTACTCTTCCCCTGTTAATCATAGCTTGGATTTAC  
AGCCAGTTACTTACTCAGAACCTGCATTTTGGTGTTCGATAGCATATTATGAATTAATCAGAGGGTTGG  
AGAAACCTTCCATGCATCACAGCCCTCACTCACTGTAGATGGCTTTACAGACCCATCAAATTCAGAGAGG  
TTCTGCTTAGGTTTACTCTCAATGTTAACCGAAATGCCACGGTAGAAATGACAAGAAGGCATATAGGAA  
GAGGAGTGGCCTTATACTACATAGGTGGGGAAGTTTTTGCTGAGTGCCTAAGTGATAGTGCAATCTTTGT  
GCAGAGCCCAATTGTAATCAGAGATATGGCTGGCACCCCTGCAACAGTGTGTAATAATCCACCAGGCTGT  
AATCTGAAGATCTTCAACAACAGGAATTTGCTGCTCTTCTGGCTCAGTCTGTTAATCAGGGTTTTGAAG  
CCGTCTATCAGCTAACTAGAATGTGCACCATAAGAATGAGTTTTGTGAAAGGGTGGGAGCAGAATACCG  
AAGGCAGACGGTAACAAGTACTCCTTGTGATGAAGTTCATCTGAATGGACCTCTACAGTGGTTGGAC  
AAAGTATTAACCTCAGATGGGATCCCTTCAGTGCCTTGTCAAGCATGTCA

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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**Protein Sequence:** >RG226623 representing NM\_001135937  
 Red=Cloning site Green=Tags(s)

MSSILPFTPPVVKRLLGWKKSSAGSGGAGGGEQNGQEEKWCEKAVKSLVKKLKKTRLDELEKAITTQNC  
 NTKCVTIPRSLDGRQLQVSHRKGLPHVIYCRLLWRWPDLSHHELKAIENCEYAFNLKKDEVCVNPHYQRV  
 ETPVLPPVLVPRHTEILTEPLDDYTHSIPENTNFPAGIEPQSNYIPETPPPGYISEDGETSDQQLNQS  
 MDTGSPAELSPPTLSPVNHSLDLQPVTYSEPAFWCSIAYYELNQRVGETFHASQPSLTVDFGTDPSNSER  
 FCLGLLSNVNRNATVEMTRRHIGRGLYYIGGEVFAECLSDSAIFVQSPNCNQRVYGWHPATVCKIPPGC  
 NLKIFNNQEFALLAQSVNQGFVAVYQLTRMCTIRMSFVKGWGAERYRQVTSTPCWIELHLNGLPLQWLD  
 KVLTMGSPSVRCSSMS

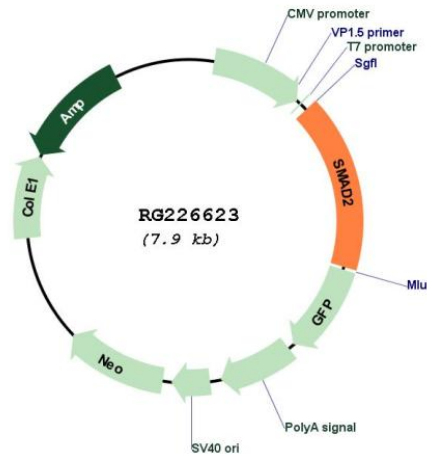
TRTRPLE – GFP Tag – V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_001135937

<b>ORF Size:</b>	1311 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_001135937.2</a> , <a href="#">NP_001129409.1</a>
<b>RefSeq Size:</b>	10444 bp
<b>RefSeq ORF:</b>	1314 bp
<b>Locus ID:</b>	4087
<b>Cytogenetics:</b>	18q21.1
<b>Protein Families:</b>	Cancer stem cells, Druggable Genome, Embryonic stem cells, ES Cell Differentiation/IPS, Stem cell relevant signaling - JAK/STAT signaling pathway, Stem cell relevant signaling - TGFb/BMP signaling pathway, Transcription Factors
<b>Protein Pathways:</b>	Adherens junction, Cell cycle, Colorectal cancer, Pancreatic cancer, Pathways in cancer, TGF-beta signaling pathway, Wnt signaling pathway

**Gene Summary:**

The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the *Drosophila* gene 'mothers against decapentaplegic' (Mad) and the *C. elegans* gene Sma. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. This protein mediates the signal of the transforming growth factor (TGF)-beta, and thus regulates multiple cellular processes, such as cell proliferation, apoptosis, and differentiation. This protein is recruited to the TGF-beta receptors through its interaction with the SMAD anchor for receptor activation (SARA) protein. In response to TGF-beta signal, this protein is phosphorylated by the TGF-beta receptors. The phosphorylation induces the dissociation of this protein with SARA and the association with the family member SMAD4. The association with SMAD4 is important for the translocation of this protein into the nucleus, where it binds to target promoters and forms a transcription repressor complex with other cofactors. This protein can also be phosphorylated by activin type 1 receptor kinase, and mediates the signal from the activin. Alternatively spliced transcript variants have been observed for this gene. [provided by RefSeq, May 2012]