

## Product datasheet for **SC116434**

### SMAD2 (NM\_005901) Human Untagged Clone

#### Product data:

|                           |                                            |
|---------------------------|--------------------------------------------|
| Product Type:             | Expression Plasmids                        |
| Product Name:             | SMAD2 (NM_005901) Human Untagged Clone     |
| Tag:                      | Tag Free                                   |
| Symbol:                   | SMAD2                                      |
| Synonyms:                 | hMAD-2; hSMAD2; JV18; JV18-1; MADH2; MADR2 |
| Mammalian Cell Selection: | None                                       |
| Vector:                   | <u><a href="#">pCMV6-XL5</a></u>           |
| E. coli Selection:        | Ampicillin (100 ug/mL)                     |



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**Fully Sequenced ORF:** >OriGene ORF within SC116434 sequence for NM\_005901 edited (data generated by NextGen Sequencing)

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ATGTCGTCATCTTGCCATTCACGCCGCCAGTTGTGAAGAGACTGCTGGGATGGAAGAAG
TCAGCTGGTGGGTCTGGAGGAGCAGGCGGAGGAGAGCAGAATGGGCAGGAAGAAAAGTGG
TGTGAGAAAGCAGTGAAGAGTCTGGTGAAGAAGCTAAAGAAAACAGGACGATTAGATGAG
CTTGAGAAAGCCATCACCCTCAAACTGTAATACTAAATGTGTTACCATAACCAAGCACT
TGCTCTGAAATTTGGGGACTGAGTACACCAAAATACGATAGATCAGTGGGATACAACAGGC
CTTTACAGCTTCTCTGAACAAACCAGGTCTCTTGATGGTCGTCTCCAGGTATCCCATCGA
AAAGGATTGCCACATGTTATATATTGCCGATTATGGCGCTGGCCTGATCTTCACAGTCAT
CATGAACTCAAGGCAATTGAAAACCTGCGAATATGCTTTTAACTTAAAAAGGATGAAGTA
TGTGTAACCCTTACCCTATCAGAGAGTTGAGACACCAGTTTTGCCTCCAGTATTAGTG
CCCCGACACACCGAGATCCTAACAGAACTTCCGCCTCTGGATGACTATACTCACTCCATT
CCAGAAAACACTAACTTCCAGCAGGAATTGAGCCACAGAGTAATTATATCCAGAAACG
CCACCTCTGGATATATCAGTGAAGATGGAGAAACAAGTGACCAACAGTTGAATCAAAGT
ATGGACACAGGCTCTCCAGCAGAACTATCTCTACTACTCTTTCCCTGTAAATCATAGC
TTGGATTTACAGCCAGTTACTTACTCAGAACCTGCATTTTGGTGTTCGATAGCATATTAT
GAATTAATCAGAGGGTTGGAGAAACCTTCCATGCATCACAGCCCTCACTCACTGTAGAT
GGCTTTACAGACCCATCAAATTCAGAGAGGTTCTGCTTAGGTTTACTCTCCAATGTTAAC
CGAAATGCCACGGTAGAAATGACAAGAAGGCATATAGGAAGAGGAGTGGCCTTATACTAC
ATAGGTGGGGAAGTTTTTGTGAGTGCCTAAGTGATAGTGAATCTTTGTGCAGAGCCCC
AATTGTAATCAGAGATATGGCTGGCACCCTGCAACAGTGTGTAATAATCCACCAGGCTGT
AATCTGAAGATCTTCAACAACCAGGAATTTGCTGCTCTTCTGGCTCAGTCTGTTAATCAG
GGTTTTGAAGCCGCTATCAGCTAACTAGAATGTGCACCATAAGAATGAGTTTTTGTGAAA
GGGTGGGAGCAGAATACCGAAGCAGACGGTAACAAGTACTCCTTGCTGGATTGAACCT
CATCTGAATGGACCTCTACAGTGGTTGGACAAAGTATTAACCTCAGATGGGATCCCCTTCA
GTGCGTTGCTCAAGCATGTCATAA
    
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Clone variation with respect to NM\_005901.4

**5' Read Nucleotide Sequence:** >OriGene 5' read for NM\_005901 unedited

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TTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGTTGGAACCTAACCA
TGCTGGTACCCTGATCTCGGACTTGCGACCTCCGGAATGTTTCGATACAAGAGGCTGTTT
TCCTAGCGTGGCTTGCTGCCTTTGGTAAGAACATGTCGTCATCTTGCCATTCACGCCGC
CAGTTGTGAAGAGACTGCTGGGATGGAAGAAGTCACTGGTGGGTCTGGAGGAGCAGGCG
GAGGAGAGCAGAATGGGCAGGAAGAAAAGTGGTGTGAGAAAGCAGTGAAGAGTCTGGTGA
AGAAGCTAAAGAAAACAGGACGATTAGATGAGCTTGAGAAAGCCATCACCCTCAAACT
GTAATACTAAATGTGTTACCATAACCAAGCACTTGCTCTGAAATTTGGGGACTGAGTACAC
CAAATACGATAGATCAGTGGGATACAACAGGCCTTTACAGCTTCTCTGAACAAACCAGGT
CTCTTGATGGTCTGCTCCAGGTATCCCATCGAAAAGGATTGCCACATGTTATATATTGCC
GATTATGGCGCTGGCCTGATCTTCACAGTCATCATGAACTCAAGGCAATTGAAAACCTGCG
AATATGCTTTTAACTTAAAAAGGATGAAGTATGTGTAACCCTTACCCTATCAGAGAG
TTGAGACACCAGTTTTGCCTCCAGTATTAGTGCCCCGACACACCGAGATCCTAACAGAAC
TCCGCCTCTGGATGACTATACTCACTCCATTCCAGAAAACACTACTTTCCAGCANGAAT
TGAGCCACAGAGTATTATATCCAGAAACGCCACCTNCTGGATATATCAGTGGAGATGGA
GAAACAAGTGACCCACAGTTGAATCAAGTATGGACACAGGCTCTCAGCAGAACTTCTCCT
ACTACTCTTTCCCTGTNNATCTAGCTTGATTACAGNCAGTTACTACTCAGACCTGCAT
TTTGGGGTTCGATAGCTATATGAATAATCAAAGGGTGGAAAACCTTCTGCTCACAGCCTA
CTACTGTAAGA
    
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| <b>3' Read Nucleotide Sequence:</b> | >OriGene 3' read for NM_005901 unedited<br>NNCCTTACTTGNCCGCGGCCGCAATCTANGATCGAGTTTTTTTTTTTTTTTTTTTTCAGCTT<br>CAAAAATTGAAAATTTATGAAAAGAGACCAGGAGTGGTTATTTTCCATTTCTACTAAGAT<br>GCAAACAAGAAGAAATGTTTAACTGCAATGAGTCAACATCAGACATAATAATTATTTGC<br>TGCAGAATGAACTAGCAACAGAGTTTCGGAAATCTCCTCTACTACAGAGCATGAAATAT<br>TGTCATCACAAAACCAGGATCAGTTAAGAACAGCTCAGACTGCAGGTAACCTTATAAGCT<br>AAAAAACTTGCTAAATAAATGGCTTTTCCCCCAATTTTTAAAAATCTGAATTCATAATTA<br>TGTGTAGAATAACAATCAATTTATAAACTGAATACAACATACTTTAAAAACAGATGGCCC<br>ATATCTGCTGATCCTACCTCAGCATCACTTTTCTAGGTATTTTGCAGAAACAATTACATT<br>TACAAAAGGCCCATTTTCATAATGCAATCTGGTTACTAAACCAAATCAAATACTCGAAGA<br>GCAGAAGTCTGCTGTTGAAATATTGTAATAACCTTTGGAAAAACGGTATTTATAGATT<br>AGCTTTTTTAAAAAGGGATAAATATGTGGAAGTAATTCTAGCATATCCCTGAAAAAATTA<br>TACTGCCACCTATGCATTTTTTATGAGGTGGAAGGATAAATCAACAGACTGCTAGATTAT<br>ACAAGCCAATTATCCTGTTGAAATTTGGGCATAAGACAAAGGGACTTTTCCATATGAA<br>TTCTTACTGTATCCAGAATTACTGGTGCCAGCAGTATCAATGCAACTATTACTGGNNGA<br>TGATGTATGTTATGCTGTTTTGATTATGAGGACAAAATGGGAATGGGAAAAAAGGGCT<br>TGNAAAGNNTTCCGNTTGGGTTCCCTATTATAGATTAACAGT |
| <b>Restriction Sites:</b>           | NotI-NotI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>ACCN:</b>                        | NM_005901                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Insert Size:</b>                 | 3000 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>OTI Disclaimer:</b>              | Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <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>                      | <u><a href="#">NM_005901.3</a></u> , <u><a href="#">NP_005892.1</a></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>RefSeq Size:</b>                 | 5415 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>RefSeq ORF:</b>                  | 1404 bp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Locus ID:</b>                    | 4087                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>UniProt ID:</b>                  | <u><a href="#">Q15796</a></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Cytogenetics:</b>                | 18q21.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Domains:</b>                     | DWB, DWA, MH1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Gene Summary:</b>     | <p>The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the <i>Drosophila</i> gene 'mothers against decapentaplegic' (Mad) and the <i>C. elegans</i> 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]</p> <p>Transcript Variant: This variant (1) uses an alternate exon (1b) in the 5' UTR compared to variant 2. Both variants 1 and 2 encode the same isoform (1). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.</p> |