

Product datasheet for **RC204604**

SMAD2 (NM_005901) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	SMAD2 (NM_005901) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	SMAD2
Synonyms:	hMAD-2; hSMAD2; JV18; JV18-1; MADH2; MADR2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC204604 representing NM_005901
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGTCGTCACCTCTTGCCATTCACGCCGCCAGTTGTGAAGAGACTGCTGGGATGGAAGAAGTCAGCTGGT
 GGTCTGGAGGAGCAGGCCGAGGAGAGCAGAATGGCGAGGAAGAAAAGTGGTGTGAGAAAAGCAGTGAAAAG
 TCTGGTGAAGAAGCTAAAGAAAACAGGACGATTAGATGAGCTTGAGAAAAGCCATCACCCTCAAAAAGT
 AATACTAAATGTGTACCATACCAAGCACTTGCTCTGAAATTTGGGGACTGAGTACACCAAAATACGATAG
 ATCAGTGGGATACAACAGGCCTTACAGCTTCTCTGAACAAACCAGGCTCTTGTATGGTCTCTCCAGGT
 ATCCCATCGAAAAGGATTGCCACATGTTATATTTGCCGATTATGGCGCTGGCCTGATCTTCACAGTCAT
 CATGAACTCAAGGCAATTGAAAAGTGGCAATATGCTTTTAACTCTAAAAAGGATGAAGTATGTGAAACC
 CTTACCCTATCAGAGAGTTGAGACACCAGTTTGCCTCCAGTATTAGTGCCCGACACACCGAGATCCT
 AACAGAACTTCCGCTCTGGATGACTATACTCACTCCATTCCAGAAAACACTAATTCCACGAGGAATT
 GAGCCACAGAGTAATTATATTCCAGAAAACGCCACTCCTGGATATATCAGTGAAGATGGAGAAAACAGTG
 ACCAACAGTTGAATCAAAGTATGGACACAGGCTCTCCAGCAGAATATCTCTACTACTCTTTCCCTGT
 TAATCATAGCTTGGATTTACAGCCAGTTACTTACTCAGAACCTGCATTTTGGTGTTCGATAGCATATTAT
 GAATTAATCAGAGGGTTGGAGAAAACCTTCCATGCATCACAGCCCTCACTCACTGTAGATGGCTTTACAG
 ACCCATCAAATCAGAGAGGTTCTGCTTAGGTTTACTCTCCAATGTTAACCGAAATGCCACGGTAGAAAT
 GACAAGAAGGCATATAGGAAGAGGAGTGCCTTATACTACATAGTGAGGGAAGTTTTTGTGAGTGCCTA
 AGTGATAGTGAATCTTTGTGCAGAGCCCAATTGTAATCAGAGATATGGCTGGCACCCTGCAACAGTGT
 GTAAAATCCACCAGGCTGTAATCTGAAGATCTCAACAACAGGAATTTGCTGCTCTTCTGGCTCAGTC
 TGTTAATCAGGGTTTTGAAGCCGTCTATCAGCTAACTAGAATGTGACCATAAGAATGAGTTTTGTGAAA
 GGGTGGGAGCAGAATACCGAAGGCAGACGGTAACAAGTACTCCTTGCTGGATTGAACCTCATCTGAATG
 GACCTCTACAGTGGTTGGACAAAGTATTAAGTCAAGTGGGATCCCTTCACTGCGTTGCTCAAGCATGTC
 A

ACGCGTACGCGGCCGCTCGAGCAGAAAACATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC204604 representing NM_005901
 Red=Cloning site Green=Tags(s)

MSSILPFTPPVVKRLLGWKKSSAGSGGAGGGEQNGQEEKWCEKAVKSLVKLKKTRLDELEKAITTQNC
 NTKCVTIPSTCSEIWGLSTPNTIDQWDTTGLYSFSEQTRSLDGRLQVSHRKGLPHVIYCRWRWPDLSH
 HELKAIENCEYAFNLKKDEVCVNPHYQYRVEPVLPPVLVPRHTEILTEPLDDYTHSIPENTNFPAGI
 EPQSNYIPETPPPGYISEDGETSDQQLNQSMGTGSPAELSPPTLSPVNHSLDLQPVTYSEPAFWCSIAYY
 ELNQRVGETFHASQPSLTVDFGTDPSNSERFCLGLLSNVNRNATVEMTRRHIGRGVRLYYIGGEVFAECL
 SDSAIFVQSPNCNQRYGWHPATVCKIPPGCNLKFNNQEFALLAQSVNQGFVAVYQLTRMCTIRMSFVK
 GWGAERYRQVTSTPCWIELHLNGLQWLDKVLTQMGSPSVRCSSMS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mg2643_b01.zip

Restriction Sites:

SgfI-MluI

Cloning Scheme:


ACCN: NM_005901

ORF Size: 1401 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.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: [NM_005901.6](#)

RefSeq Size: 5415 bp

RefSeq ORF: 1404 bp

Locus ID: 4087

UniProt ID: [Q15796](#)

Cytogenetics: 18q21.1

Domains: DWB, DWA, MH1

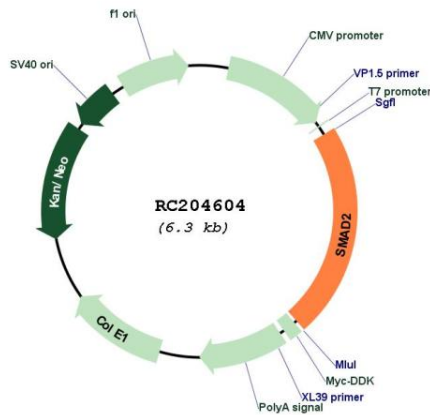
Protein Families: Cancer stem cells, Druggable Genome, Embryonic stem cells, ES Cell Differentiation/IPS, Stem cell relevant signaling - JAK/STAT signaling pathway, Stem cell relevant signaling - TGFb/BMP signaling pathway, Transcription Factors

Protein Pathways: Adherens junction, Cell cycle, Colorectal cancer, Pancreatic cancer, Pathways in cancer, TGF-beta signaling pathway, Wnt signaling pathway

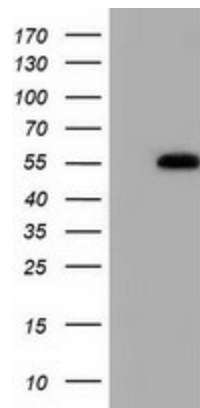
MW: 52.1 kDa

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]

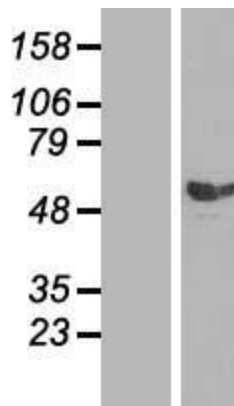
Product images:



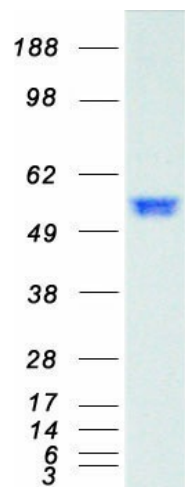
Circular map for RC204604



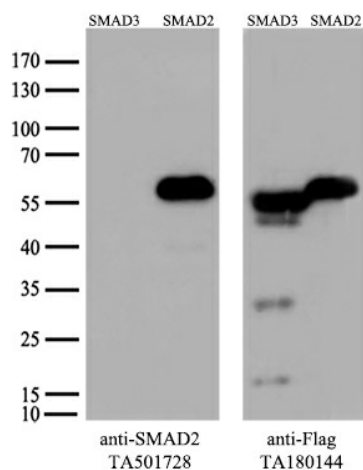
HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY SMAD2 (Cat# RC204604, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-SMAD2(Cat# [TA501728]). Positive lysates [LY401783] (100ug) and [LC401783] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY401783]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC204604 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified SMAD2 protein (Cat# [TP304604]). The protein was produced from HEK293T cells transfected with SMAD2 cDNA clone (Cat# RC204604) using MegaTran 2.0 (Cat# [TT210002]).



HEK293T cells were transfected with the 2 different overexpression plasmids (SMAD3, Cat# [RC208749]; SMAD2, Cat# RC204604) for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-SMAD2 mouse monoclonal antibody (Cat# [TA501728], 1:500) or anti-flag antibody (Cat# [TA180144], 1:1000).