

Product datasheet for **RG213796**

Collagen IV (COL4A1) (NM_001845) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Collagen IV (COL4A1) (NM_001845) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	COL4A1
Synonyms:	BSVD; BSVD1; COL4A1s; PADMAL; RATOR
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG213796 ORF sequence, codon optimized . Due to the complexity of NM_001845, the ORF clone is codon optimized for mammalian Expression. The nucleotide sequence differs from the reference sequence, yet the amino acid sequence remains identical.

Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGGATCGCC**

ATGGGACCGAGACTGTCTGTATGGTTGCTCCTGCTGCCCGCTGCCCTGCTGCTTACGAGGAGCATTCCC
GGGCTGCCCGCAAAGGGGGTGTGCAGGCAGCGCTGTGGTAAATGTGATTGTCACGGCGTCAAGGGCCA
GAAGGGAGAGCGGGTCTGCCGGTCTGCAAGGTGTGATCGGATTTCCCGGAATGCAAGGTCACAGGGC
CCACAGGGCCACCCGGCCAGAAAGGCGACACCGGAGAGCCAGGCCTGCCTGGCACCAAAGGAACACGGG
GACCACCTGGGGCTAGCGGATACCCTGGAACCCCGGGCTGCCGGGGATTCCCGGCCAGGACGGGCCCCC
CGGTCCACCCGGAATCCAGGGTGTAAACGGTACCAAGGGAGAACCGGCCCACTGGTCCCCGGGCTTG
CCTGGTTTCGAGGCAACCCGGGACCCCTGGGCTGCCGGGATGAAGGGAGATCCCGGGCAAATCCTTG
GTCAATGTTCCCGGGATGCTGCTCAAGGGCGAAAGGGGATTCCAGGCATCCCGGGGACGCCCGGTCGCG
TGGACTGCCAGGTCTGCAGGGACCTGTGGGCCACCCGGGTTTACTGGGCCCCAGGGCCACCTGGACCA
CCCGGACCCCGAGGGAGAAGGGACAGATGGGGTGTCTTTTCAGGGTCCGAAAGGGGACAAAGGGGACC
AAGGCGTGAGTGGCCCTCCTGGAGTGCCCGGCCAGGCCAGGTACAGGAGAAGGGCGATTTTGCTACTAA
AGGCGAAAAGGGACAAAAGGGTGAACCTGGCTTTCAAGGGATGCCGGGGTTGGAGAGAAGGGGAGCCA
GGAAAACCGAGCCGAGAGGCAAGCCTGGGAAGGATGGAGACAAAGGAGAGAAAGGAAGCCCGGCTTTC
CCGGTGAACCGGGTACCAGGACTGATTGGGCGCCAGGGACACAGGGTGAAGAAAGGAGAAGCAGGCC
TCCTGGACCTCCAGGAATCGTCATTGGAACAGGACCATTGGGGGAGAAGGGCGAGAGAGGATAACCCCGG
ACCCAGGGCCCGGGGCGAACAGGGCCTAAGGGGTTCCAGGGCTGCCAGGTCAGCCAGGTCCTCCAG



[View online »](#)

GTCTGCCGGTGCCAGGCCAGGCCGGAGCTCCTGGCTTCCCTGGTGAAGAGGGCGAAAAAGGCGACAGAGG
TTTTCCAGGCACTTCTTTGCCTGGCCCGTCCGGCAGGGATGGCCTGCCGGGACCACCGGGCAGTCCCGGG
CCCCCGGTCCAGCTGGATATACAAATGGCATCGTGGAGTGTCAACCAGGACCCCGGAGATCAAGGCC
CACCCGGAATCCCAGGGCAGCCTGGATTCAATGGCGAGATTGGAGAGAAGGGGCAGAAAGGGGAATCATG
CCTGATATGTGATATTGATGGTTACAGAGGGCCACCCGGGCCACGGGCCCCCGGGGAAATCGGCTTT
CCAGGTCAGCCAGGTGCAAAGGGGGACAGGGGACTGCCAGGAAGGGACGGGTAGCCGGCGTGGCAGGCC
CCCAGGGCACCCCTGGACTCATTGGTCAGCCCGTGGCAAGGGTGAACCTGGGGAATCTATTTGATCT
GGCCTCAAAGGGCACAAGGGGACCCGGGCTTCCAGGCCAGCCGGAATGCCTGGCAGAGCCGGGAGC
CCAGGGCGAGATGGACACCCAGGTCTGCCAGGACCAAGGGCAGCCAGGAAGCGTTGGCCTGAAAGGGG
AACCGGCTCCTCCGGGGCGTGGGATCCCGGGAAGCCGGGGTGTACAGGACCTCCTGGCCCTCCTGG
ATATGGTCCAGCTGGCCCTATCGGGGTAAGGGGCAGGCAGGGTTCCTGGAGGGCTGGGAGCCCGGG
CTTCTGGACAAAAGGGCAGCCTGAAAAATTGTCCTTCCCGGGCCACTGGAGCGGAGGGTCTGC
CAGGCTCACCCGGCTTCCGGGACCCAGGGGACCGGGATTCCCTGGTACACCCGGCCCGCCCGGCT
GCCCGGAGAAAAAGGGCAGTAGGACAGCCTGGGATCGGATTCCCGGGACCGCTGGACCAAGGGAGTC
GATGGGCTGCCGGCGATATGGGGCCACCAGGCACCCCGGACGGCCCGGATTTAACGGCCTGCCGGAA
ACCCCGGTGTACAAGGTAGAAAAGGGCAGCCAGGCGTGGGACTGCCTGGACTGAAAAGGGCTGCCCGGCT
GCCTGGAATCCCGGTACCCCGGCGAGAAAGGAAGTATCGGTGTGCCCGGGGTGCCAGGAGAATATGGC
GCGATTGGGCCCCGGGACTGCAGGGGATTCGCGGCGAGCCCGGCCCCAGGGCTGCCCGGAGCGTCCG
GCAGTCTGGGGTGCCTGGCATCGGGCCACCCGGGGCCAGAGGACCGCTGGGGGACAGGGCCCCCGGG
CCTTAGCGGCCCCCAGGAATCAAAGGGCAAAGGGATTCCCGGCTTCCAGGACTTGATATGCCTGGG
CCTAAAGGGGACAAAGGGGCACAGGGCTTCCAGGAATCACTGGCAATCTGGACTCCCGGGCTCCCGG
GTCAGCAGGGCGCACCCGGCATTCCGGGATTCCCTGGCAGCAAGGGAGAAATGGGCGTATGGGGACCC
CGGTGAGCCAGGCTCACCCGGACCCGTGGGTGCACCCGGACTCCAGGAGAAAAGGGGAGATCATGGCTTT
CCAGGCTCCAGCGGCCACGGGGGACCCAGGACTGAAAAGGAGATAAGGGAGATGTGGGACTGCCTGGCA
AGCCTGGCTCCATGGACAAGGTAGACATGGGGAGCATGAAGGGCCAGAAGGGCGATCAGGGAGAGAAGGG
ACAAATTGGTCTATCGGTGAAAAGGGCAGTAGGGGGATCCTGGTACACCCGGAGTGCCAGGAAAAGAT
GGGCAGGCAGGACAGCCTGGACAGCCCGGGCCAAAGGAGATCCCGGAATCTCTGGGACCCCTGGAGCTC
CCGGACTCCCGGACCAAGGGATCAGTAGGGGCATGGGCTGCCTGGAACCCCGGCGAGAAAGGGGT
GCCGGGATCCCGGGCCCTCAAGGATCTCCAGGGCTTCTGGCGATAAAGGGGCAAAGGGGAAAAAGGC
CAAGCCGGCCACCTGGAATTGGAATCCCTGGCCTTCGAGGAGAGAAGGGCGACCAAGGAATAGCAGGCT
TCCCGGGTCCCGGGGCAAAGGGGAGAAAGGAAGTATCGGAATCCAGGCATGCCTGGTTCTCCAGG
TCTGAAGGGATCACCCGGCTCAGTCGGTATCCTGGCAGTCCCGGGTGGCAGGCCAGAAAGGGCGATAAA
GGACTTCCAGGCCTGGATGGAATACCCGGTGTCAAGGGAGAGGCAGGCCTCCCTGGTACTCCCGGGCCCA
CCGGCCCCCGGACAAAAGGGCAACCCGGTCCGATGGAATCCAGGGTCTGCCGGGGAGAAGGGGGA
ACCCGGGCTCCCGGGCGCGGATCCCGGGGTTCCCGGGGCCAAAGGAGACAAGGGATCCAAAGGGGAG
GTAGGGTTCCTGGTCTGGCCGGCTCCCGGGCATTCCAGGAAGTAAAGGGGAGCAAGGTTTTATGGGGC
CCCCGGGCTCAGGGTCAACCAGGGTGCCTGGTAGTCCCGGCCACGCCACCGAGGGCCCCAAGGGCGA
CAGGGGGCCGACGGTCAAGGAGGTCTGCCAGGACTGCCAGGCCAATGGGCCCGCTGGCCTCCCTGGC
ATAGATGGGGTAAAAGGGGACAAAGGCAATCCCGGTGGCCCGGGCCCTGGCCTGCCTGGACCGAAGG
GAGATCCTGGTTTTCAAGGCATGCCCGGAATAGGGGGAAGCCCTGGCATCACCGGCAGCAAGGGAGACAT
GGGACCGCGGGCGTACCCGGCTTTCAGGGGCCAAGGGCCTGCCCGGACTTCAGGGAATTAAGGGCGAT
CAGGGCGACAGGGAGTACCCGGCGCTAAGGGTCTTCTGGGCCACCTGGTCTCCAGGTCCCTATGATA
TTATCAAAGGGGAACAGGGTTCCTGGGCCAGGGGCTCCAGGCTTGAAGGGCTCCAGGGACTGCC
AGGACCAAGGGACAACAGGGTGTGACCGGCTCGTCGGCATCCAGGACCCCGGCATCCCTGGATTC
GACGGCGCTCCCGCCAGAAGGGAGAAATGGGTCTGCTGGACCTACAGGACCGCGGGCTCCAGGAC
CTCCGGGGCCAGATGGGTTGCTGGTCTATGGGGCCCTGGCACTCCTCAGTTGACCACGGGTTCTT
GGTACTAGGCATAGCCAGACATTGATGACCCACAGTGGCCCTCCGGCACAAGATTTTGTACCACGGC
TATAGCCTCCTATGTGCAAGGAACGAGCGCGCATGGACAGGACCTGGGAACAGCCGGAAGTTGCC
TGCGAAGTTCAGCACCATGCCTTTCCTTTTTTGTAAATTAACAACGTATGCAATTTTGCCTCCCGGAA
CGACTATTCCTACTGGTTGAGTACTCCGGAACCTATGCCATGTCAATGGCCCCATTACAGGCGAAAAAC
ATTCGACCCTTATTTCAAGGTGTGCTGTCTGCGAAGCTCCAGCTATGGTGTGGCGGTGCACAGCCAAA
CCATCAAATCCCGCCCTGTCCATCAGGGTGGTCCAGCCTGTGGATTGGATATAGCTTTGTGATGCACAC

GTCCGCAGGAGCTGAGGGCTCTGGCCAGGCCCTGGCAAGTCCAGGTAGCTGCTTGAAGAGTTTCGATCA
 GCGCCTTTCATAGAATGTCATGGCGGGGAACCTTGCAACTACTACGCGAACGCTTATAGCTTTTGTTGG
 CTACCATCGAGCGCAGCGAAATGTTTAAGAAGCCTACCCCTAGCACCCCTCAAGGCTGGCGAGCTTCGGAC
 CCACGTGTCCCGATGCCAGGTCTGTATGCGCCGGACC

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>RG213796 representing NM_001845
 Red=Cloning site Green=Tags(s)

MGPRLSVWLLLLPAALLLHEEHSRAAAKGGCAGSGCGKCDCHGVKQKGERGLPGLQGVIGFPGMQGPEG
 PQGPPGQKGDTEPGLPGTKGTRGPPGASGYPGNPGLPGIPGQDGPPIPGCNGTKGERGLGPPGL
 PGFAGNPGPPGLPGMKGDPEILGHVPGMLLKGERGFPPIGTPGPPGLPGLQGPVGPFTGPPGPPG
 PGPPGKQMGLSFGPKGDKGQDQVSGPPGVPQAQVQEKGFATKGEKQKGEKGFQGMPPGVEKGEK
 GKPGPRGKPGKDGDKGKGSPPGEPYPLIGRQGPQKEKGEAGPPGPIVIGTGLGEKGERGYPG
 TPGRGEPGPKGFPGLPQPGPPPLVPGQAGAPGFPGERGEKDRGFPGTSLPGPSGRDGLPGPPGSPG
 PPGQPGYNGIVECQPGPPDQPPGIPQPGFGEIAGEKQKGESCLICDIDYRGPQPPGPPGEGIF
 PGQPGAKGDRGLPGRDGVAGVPGQGTPLIGQPGAKGEPGEFYDLRLKGDGDPGFPQPGMPGRAGS
 PGRDGHPLPGKSPGSLKGERGPPGGVGFPGSRGDTGPPGPPGYGAPIGDKQAGFPGGPSPG
 LPGPKGEPKIVPLPGPPGAELPGSPGFPQDGRGFPGTGRPLPGEKGAQVQPGIFGPPGPKGV
 DGLPGDMGPPGTGRPGFNGLPGNPGVQKQKGEKGVGLPGLKGLPGLPGIPGTPGEKGSIGVPGVGEHG
 AIGPPGLQGIERGEPPGLPGSVGSPVPGIIPGARGPPGGQPPGLSGPPGIKGEKGFPGFGLDMPG
 PKGDKGAQGLPGITGQSLPGLPGQQAQPIPGFPGSKGEMVMGTPGQPGSPGVPVAPGLPGEKGDHGF
 PGSSGPRGDPGLKGDGKVGLPGKPGSMDKVDMSGMKQKGDQGEKQIIPGIEKGRGDPGTPGVPKGD
 GQAGQPGQPGKDPGISGTPGAPPLPGPKGSVGMGLPGTPGEKGVPGIPGQSPGLPGDKAKGEK
 QAGPPGIIPGLRGEKGDQGIAGFPGSPGKGEKGSIGIPGMPGSPGLKGSVGVYVPGSPGLPGEKGD
 GLPGLDIPGVKGEAGLPGTPGTPAGQKGEKGSIPGSAKEKGEKGLPGRGFPFPGAKGDKGSKGE
 VGFPGLAGSPGIPGSKGEQGMPPGPPGQGLPGSPGHATEGPKGDRGPPGQGLPGLPGMPGPPGLPG
 IDGVKGDKNPWPAGVPGPKGDPGFQGMPIGGSPGITGSKGDMGPPGVPVGFQGPGLPGLQGIKGD
 QDQGVPGAKGLPGPPGPPGYDIIKGEPLPGPEGPPGLKGLQGLPGPKGQGVTLVGIPIGPPGIPGF
 DGAPGQKGMGAPGTGPRGFPGPPGPDGLPGSMGPPGTPSVDHGFLVTRHSQTIDDPQCPSTKILYHG
 YSLLYVQNERAHGQDLGTAGSCLRKFSTMPFLFCNINNVCFASRNDYSYWLSTPEPMPMSMAPITGEN
 IRPFISRCAVCEAPAMVMAVHSQTIQIPPCPSGWSLWIGYSFVMHTSAGAEGSGQALASPGSCLEEFRS
 APFIECHGRGTCNYANAYSFWLATIERSEMFKKPTSTLKAGELRTHVSRQVCMRRT

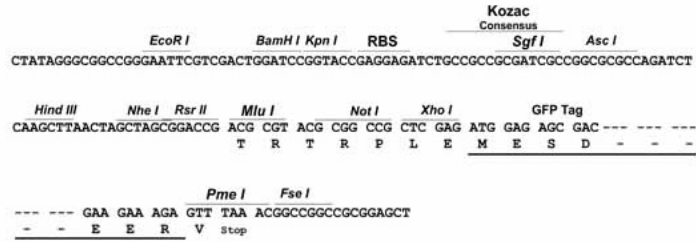
TRTRPLE – GFP Tag – V

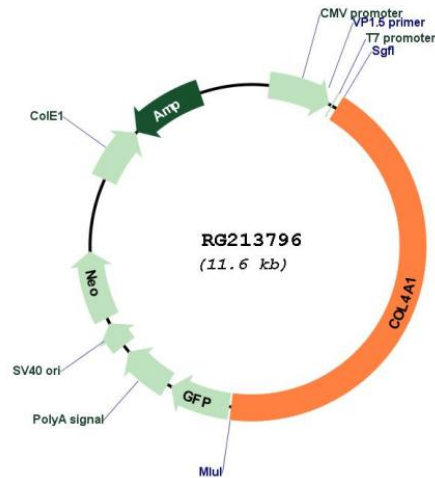
Restriction Sites:

SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:


ACCN: NM_001845

ORF Size: 5007 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.

RefSeq: [NM_001845.3](#), [NP_001836.1](#)

RefSeq Size: 6540 bp

RefSeq ORF: 5010 bp

Locus ID: 1282

UniProt ID: [P02462](#)

Cytogenetics: 13q34

Protein Pathways:

ECM-receptor interaction, Focal adhesion, Pathways in cancer, Small cell lung cancer

Gene Summary:

This gene encodes a type IV collagen alpha protein. Type IV collagen proteins are integral components of basement membranes. This gene shares a bidirectional promoter with a paralogous gene on the opposite strand. The protein consists of an amino-terminal 7S domain, a triple-helix forming collagenous domain, and a carboxy-terminal non-collagenous domain. It functions as part of a heterotrimer and interacts with other extracellular matrix components such as perlecan, proteoglycans, and laminins. In addition, proteolytic cleavage of the non-collagenous carboxy-terminal domain results in a biologically active fragment known as arresten, which has anti-angiogenic and tumor suppressor properties. Mutations in this gene cause porencephaly, cerebrovascular disease, and renal and muscular defects. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Dec 2014]