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Product datasheet for RG222175

Sonic Hedgehog (SHH) (NM_000193) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Sonic Hedgehog (SHH) (NM_000193) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Sonic Hedgehog
Synonyms:	HHG1; HLP3; HPE3; MCOPCB5; ShhNC; SMMCI; TPT; TPTPS
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)

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ORF Nucleotide Sequence:

>RG222175 representing NM_000193
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGGCGAGATGCTGCTGCTGGCGAGATGTCTGCTGCTAGTCCTCGTCTCCTCGCTGCTGGTATGCTCGG
GACTGGCGTGCGGACCGGGCAGGGGGTTCGGGAAGAGGAGGCACCCCAAAAAGCTGACCCCTTTAGCCTA
CAAGCAGTTTATCCCCAATGTGGCCGAGAAGACCCTAGGCGCCAGCGGAAGGTATGAAGGGAAGATCTCC
AGAAACTCCGAGCGATTTAAGGAACTCACCCCCAATTACAACCCCGACATCATATTTAAGGATGAAGAAA
ACACCGGAGCGGACAGGCTGATGACTCAGAGGTGTAAGGACAAGTTGAACGCTTTGGCCATCTCGGTGAT
GAACCAGTGGCCAGGAGTGAAACTGCGGGTGACCGAGGGCTGGGACGAAGATGGCCACCACTCAGAGGAG
TCTCTGCACTACGAGGGCCGCGCAGTGGACATCACCACGTCTGACCGCGACCGCAGCAAGTACGGCATGC
TGGCCCGCCTGGCGGTGGAGGCCGGCTTCGACTGGGTGTACTACGAGTCCAAGGCACATATCCACTGCTC
GGTGAAAGCAGAGAACTCGGTGGCGGCCAAATCGGGAGGCTGCTTCCCGGGCTCGGCCACGGTGCACCTG
GAGCAGGGCGGCACCAAGCTGGTGAAGGACCTGAGCCCCGGGGACCGCGTGCTGGCGGCGGACGACCAGG
GCCGGCTGCTCTACAGCGACTTCCTCACTTTCCTGGACCGCGACGACGGCGCCAAGAAGGTCTTCTACGT
GATCGAGACGCGGGAGCCGCGCGAGCGCCTGCTGCTCACCGCCGCGCACCTGCTCTTTGTGGCGCCGCAC
AACGACTCGGCCACCGGGGAGCCCGAGGCGTCCTCGGGCTCGGGGCCGCCTTCCGGGGGCGCACTGGGGC
CTCGGGCGCTGTTCGCCAGCCGCGTGCGCCCGGGCCAGCGCGTGTACGTGGTGGCCGAGCGTGACGGGGA
CCGCCGGCTCCTGCCCGCCGCTGTGCACAGCGTGACCCTAAGCGAGGAGGCCGCGGGCGCCTACGCGCCG
CTCACGGCCCAGGGCACCATTCTCATCAACCGGGTGCTGGCCTCGTGCTACGCGGTCATCGAGGAGCACA
GCTGGGCGCACCGGGCCTTCGCGCCCTTCCGCCTGGCGCACGCGCTCCTGGCTGCACTGGCGCCCGCGCG
CACGGACCGCGGCGGGGACAGCGGCGGCGGGGACCGCGGGGGCGGCGGCGGCAGAGTAGCCCTAACCGCT
CCAGGTGCTGCCGACGCTCCGGGTGCGGGGGCCACCGCGGGCATCCACTGGTACTCGCAGCTGCTCTACC
AAATAGGCACCTGGCTCCTGGACAGCGAGGCCCTGCACCCGCTGGGCATGGCGGTCAAGTCCAGC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

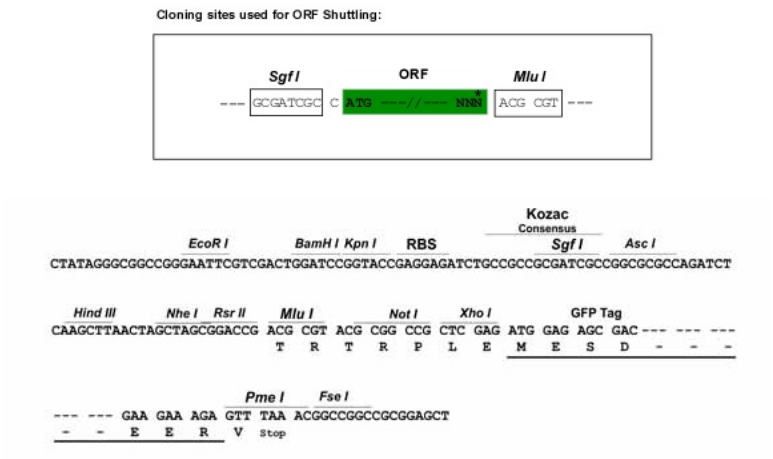
>RG222175 representing NM_000193
Red=Cloning site Green=Tags(s)

MGEMLLLARCLLLVLVSSLLVCSGLACGPGRGFGKRRHPKKLTPLAYKQFIPNVAEKTLGASGRYEGKIS
RNSERFKELTPNYNPDIIFKDEENTGADRLMTQRCKDKLNALAISVMNQWPGVKLRVTEGWDEDGHHSEE
SLHYEGRAVDITTSDRDRSKYGMLARLAVEAGFDWVYYESKAHIHCSVKAENSVAAKSGGCFPGSATVHL
EQGGTKLVKDLSPGDRVLAADDQGRLLYSDFLTFLDRDDGAKKVFYVIETREPRERLLLTAAHLLFVAPH
NDSATGEPEASSGSGPPSGGALGPRALFASRVRPGQRVYVVAERDGDRRLLPAAVHSVTLSEEAAGAYAP
LTAQGTILINRVLASCYAVIEEHSWAHRAFAPFRLAHALLAALAPARTDRGGDSGGGDRGGGGGRVALTA
PGAADAPGAGATAGIHWYSQLLYQIGTWLLDSEALHPLGMAVKSS

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_000193

ORF Size: 1395 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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.

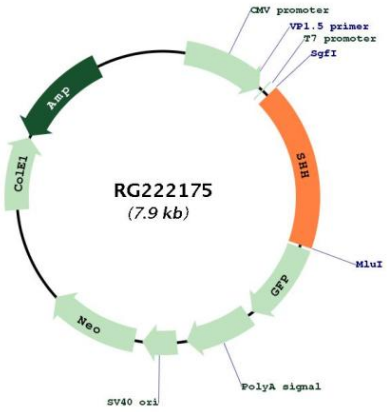
Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

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_000193.2, NP_000184.1

RefSeq Size:	1576 bp
RefSeq ORF:	1389 bp
Locus ID:	6469
UniProt ID:	Q15465
Cytogenetics:	7q36.3
Protein Families:	Druggable Genome, ES Cell Differentiation/IPS, Secreted Protein, Transmembrane
Protein Pathways:	Basal cell carcinoma, Hedgehog signaling pathway, Pathways in cancer
Gene Summary:	This gene encodes a protein that is instrumental in patterning the early embryo. It has been implicated as the key inductive signal in patterning of the ventral neural tube, the anterior-posterior limb axis, and the ventral somites. Of three human proteins showing sequence and functional similarity to the sonic hedgehog protein of Drosophila, this protein is the most similar. The protein is made as a precursor that is autocatalytically cleaved; the N-terminal portion is soluble and contains the signalling activity while the C-terminal portion is involved in precursor processing. More importantly, the C-terminal product covalently attaches a cholesterol moiety to the N-terminal product, restricting the N-terminal product to the cell surface and preventing it from freely diffusing throughout the developing embryo. Defects in this protein or in its signalling pathway are a cause of holoprosencephaly (HPE), a disorder in which the developing forebrain fails to correctly separate into right and left hemispheres. HPE is manifested by facial deformities. It is also thought that mutations in this gene or in its signalling pathway may be responsible for VACTERL syndrome, which is characterized by vertebral defects, anal atresia, tracheoesophageal fistula with esophageal atresia, radial and renal dysplasia, cardiac anomalies, and limb abnormalities. Additionally, mutations in a long range enhancer located approximately 1 megabase upstream of this gene disrupt limb patterning and can result in preaxial polydactyly. [provided by RefSeq, Jul 2008]

Product images:



Circular map for RG222175