

## Product datasheet for **RG228646**

### Hamartin (TSC1) (NM\_001162426) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Hamartin (TSC1) (NM_001162426) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	TSC1
Synonyms:	LAM; TSC
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG228646 representing NM_001162426 Red=Cloning site Blue=ORF Green=Tags(s)

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GCC**CGATCGCC**

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GCAGAGGCAGAGCCTGTGGTTCCTCGAGGAGGCTTTGACTCTCCCTTTTACCGAGACAGTCTCCCAGGTT  
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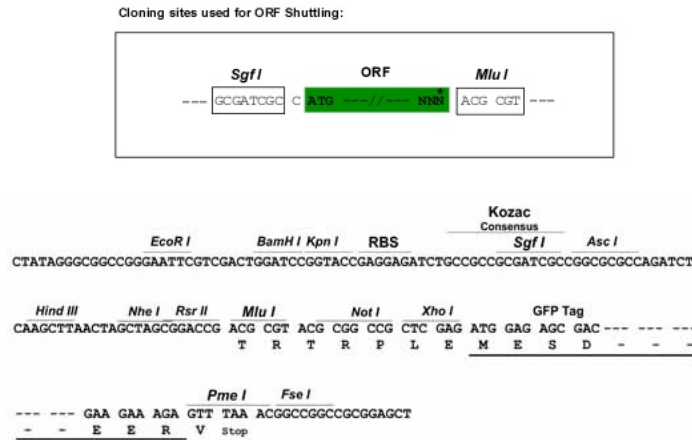
ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence: >RG228646 representing NM\_001162426  
 Red=Cloning site Green=Tags(s)

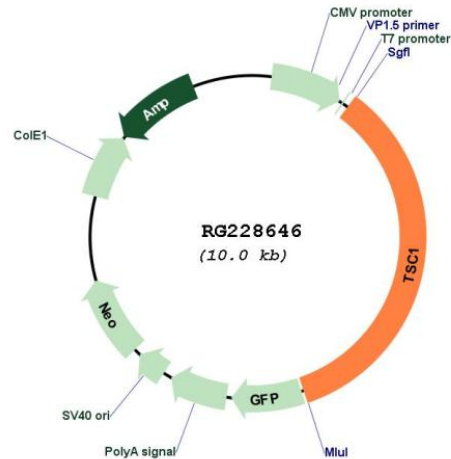
MAQQANVGELLAML DSPMLGVRDDVTAVFKENLNSDRGPMLVNTLV DYYLETSSQPALHILTTLQEPHDK  
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 VQQQMEFLNRQLLVLGEVNELYLEQLQNKHSDTTKEVEMMKAAYRKELEKNRSHVLQQTQR LDT SQKRILE  
 LESHAKKDHLLEQKKYLEDVKLQARGQLQAAESRYEAQKRITQVFELEILDLYGRLEKDGLLKKLEEE  
 KAEAAEAERLDCNDGCSDSMVGHNEEASGHNGETKTPRPSSARGSSGSRGGGSSSSSELSTPEKP  
 PHQRAGPFSSRWETT MGEASASIP TTVGSLPSSK SFLGMKARELFRNKSESQCDEDEGMTSSLSSELKTEL  
 GKDLGVEAKIPLNLDGPHSPPTPDSVGLHIMDYNETHHEHS

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI  
 Cloning Scheme:



## Plasmid Map:



ACCN: NM\_001162426

ORF Size: 3489 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\\_001162426.2](#)

RefSeq Size: 8623 bp

RefSeq ORF: 3492 bp

Locus ID: 7248

UniProt ID: [Q92574](#)

Cytogenetics: 9q34.13

**Protein Pathways:** Insulin signaling pathway, mTOR signaling pathway

**Gene Summary:** This gene is a tumor suppressor gene that encodes the growth inhibitory protein hamartin. The encoded protein interacts with and stabilizes the GTPase activating protein tuberin. This hamartin-tuberin complex negatively regulates mammalian target of rapamycin complex 1 (mTORC1) signalling which is a major regulator of anabolic cell growth. This protein also functions as a co-chaperone for Hsp90 that inhibits its ATPase activity. This protein functions as a facilitator of Hsp90-mediated folding of kinase and non-kinase clients, including Tsc2 and thereby preventing their ubiquitination and proteasomal degradation. Mutations in this gene have been associated with tuberous sclerosis. [provided by RefSeq, Apr 2018]