

## Product datasheet for **RG223702**

### Angiotensin Converting Enzyme 1 (ACE) (NM\_000789) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Angiotensin Converting Enzyme 1 (ACE) (NM_000789) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	ACE
Synonyms:	ACE1; CD143; DCP; DCP1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG223702 representing NM_000789 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGGGCCGCTCGGGCCGCGGGGGCCGGGGCTGCTGCTGCCGCTGCCGCTGCTGTTGCTGCTGCCGC  
CGCAGCCCGCCCTGGCGTTGGACCCCGGGCTGCAGCCCGCAACTTTTCTGCTGACGAGGCCGGGGCGCA  
GCTCTTCGCGCAGAGCTACAACCCAGCGCCGAACAGGTGCTGTTCCAGAGCGTGGCCGCCAGTGGGCG  
CAGCACCAACATCACC GCGGAGAATGCAAGGCCAGGAGGAAGCAGCCCTGCTCAGCCAGGAGTTTG  
CGGAGGCTGGGGCCAGAAGGCCAAGGAGCTGTATGAACCGATCTGGCAGAACTTACGGACCCGACGCT  
GCGCAGGATCATCGGAGCTGTGCGCACCCCTGGGCTCTGCCAACCTGCCCTGGCTAAGCGGCAGCAGTAC  
AACGCCCTGCTAAGCAACATGAGCAGGATCTACTCCACCGCAAGGTCTGCCTCCCAACAGAGTGCCA  
CCTGCTGGTCCCTGGACCCAGATCTCACCAACATCCTGGCTTCTCGCGAAGCTACGCCATGCTCCTGTT  
TGCTGGGAGGGCTGGCACAACGCTGCGGGCATCCCGTGAAACCGCTGTACGAGGATTTACTGCCCTC  
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GACTGGTGGTATCTTCGAACCAAGTATCAGGGGATCTGTCTCCTGTTACCCGAAACGAAACCCACTTTG  
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CTGCTGCTTCTTGGGCTCGCCCTGCTGGTAGCCACCTGGGCTCAGCCAGCGGCTCTTTCAGCATCC  
GCCACCGCAGCTCCACCGGCACTCCACGGGCCAGTTCCGGCTCCGAGGTGGAGCTGAGACACTCC

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTAA

**Protein Sequence:** >RG223702 representing NM\_000789  
 Red=Cloning site Green=Tags(s)

MGAASGRRGPGLLLPLLLLLLPPQPALALDPGLQPGNFSADEAGAQLFAQSYNSSAEQVLFQSVAAASWA  
 HDTNITAENARRQEAAALLSQEFAEAWGQKAKELYEPIWQNFDPQLRRIIGAVRTLGSANLPLAKRQQY  
 NALLSNMSRIYSTAKVCLPNKTATCWSLDPDLTNILASSRSYAMLLFAWEGWHNAAGIPLKPLYEDFTAL  
 SNEAYKQDGFDTGAYWRSWYNSPTFEDDLEHL YQQLEPLYLNLHAFVRRALHRRYGDRIYINLRGPIPAH  
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 EDLVVAHHEMGHIQYFMQYKDLPVALREGANPGFHEAIGDVLALSVSTPKHLHSLNLLSSEGGSDHEHDIN  
 FLMKMALDKIAFIPFSYLVQWRWRVFDGSIKTENYNQEWWSLRLKYQGLCPPVPRVQGFDPGAKFHIP  
 SSVPIRYVFSFIIQFQFHEALCQAAGHTGPLHKCDIYQSKEAGQRLATAMKLGFSRPWPEAMQLITGQP  
 NMSASAMLSYFKPLLDWLR TENELHGEKLGWPQYNWTPNSARSEGPLPDSGRVSVFLGLDLDAQARVQGW  
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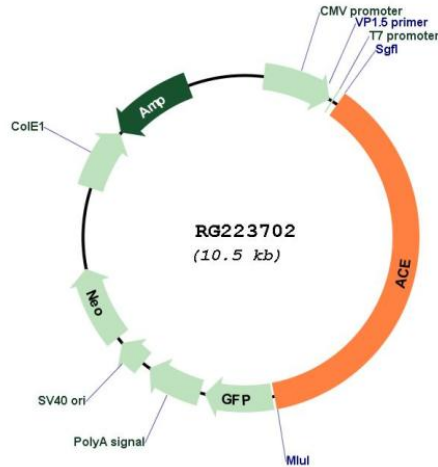
TRTRPLE - GFP Tag - V

**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**


**ACCN:** NM\_000789

**ORF Size:** 3918 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](mailto: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\\_000789.4](#)

RefSeq Size:	4969 bp
RefSeq ORF:	3921 bp
Locus ID:	1636
UniProt ID:	<a href="#">P12821</a>
Cytogenetics:	17q23.3
Domains:	Peptidase_M2
Protein Families:	Druggable Genome, ES Cell Differentiation/IPS, Protease, Secreted Protein, Transmembrane
Protein Pathways:	Hypertrophic cardiomyopathy (HCM), Renin-angiotensin system
Gene Summary:	<p>This gene encodes an enzyme involved in blood pressure regulation and electrolyte balance. It catalyzes the conversion of angiotensin I into a physiologically active peptide angiotensin II. Angiotensin II is a potent vasopressor and aldosterone-stimulating peptide that controls blood pressure and fluid-electrolyte balance. This angiotensin converting enzyme (ACE) also inactivates the vasodilator protein, bradykinin. Accordingly, the encoded enzyme increases blood pressure and is a drug target of ACE inhibitors, which are often prescribed to reduce blood pressure. This enzyme additionally plays a role in fertility through its ability to cleave and release GPI-anchored membrane proteins in spermatozoa. Many studies have associated the presence or absence of a 287 bp Alu repeat element in this gene with the levels of circulating enzyme. This polymorphism, as well as mutations in this gene, have been implicated in a wide variety of diseases including cardiovascular pathophysiologies, psoriasis, renal disease, stroke, and Alzheimer's disease. Regulation of the homologous ACE2 gene may be involved in progression of disease caused by several human coronaviruses, including SARS-CoV and SARS-CoV-2. Alternative splicing results in multiple transcript variants encoding both somatic (sACE) and male-specific testicular (tACE) isoforms. [provided by RefSeq, Sep 2020]</p>