

## Fluorescent Protein Expression Plasmid

*CoralHue*<sup>TM</sup>

### ER-targeted monomeric Azami-Green407 (pER-mAG407)

Code No.  
AM-V0292M

Quantity  
20 µg

**BACKGROUND:** This plasmid is designed for expression of endoplasmic reticulum (ER)-targeted *CoralHue*<sup>TM</sup> monomeric Azami-Green407 (mAG407) in mammalian cells. The fluorescent protein mAG407 was engineered from *CoralHue*<sup>TM</sup> monomeric Azami-Green 1 (mAG1) to have an excitation peak at 407 nm and a emission peak at 498 nm, retaining its structure to form monomeric. Unlike many other fluorescent proteins, *CoralHue*<sup>TM</sup> mAG407 is stable in both acidic and basic conditions without significant loss of the fluorescence. Targeting of mAG407 to the ER is achieved with the signal peptide and ER-retention sequence (Lys-Asp-Glu-Leu) of calreticulin fused to the N- and C-terminus of mAG407, respectively.

**SOURCE:** The *CoralHue*<sup>TM</sup> AG gene was cloned from the stony coral “Azami-Sango (*Galaxea fascicularis*).”

**FORMULATION:** Dry form. Reconstitute with distilled water or TE before use.

**PURITY:** A260/A280 > 1.5

**STORAGE:** Store at -20°C

#### SEQUENCE LANDMARKS (bases):

*CoralHue*<sup>TM</sup> ER-mAG407 (Including Stop Codon):  
bases 1-747  
CMV Promoter: bases 4091-4663  
SV40 poly A: bases 907-941  
Kanamycin/Neomycin resistance gene: bases 1984-2775  
pUC Origin: bases 3363-4006  
f1 Origin: bases 1004-1459  
SV40 Origin: bases 1800-1935

#### INTENDED USE:

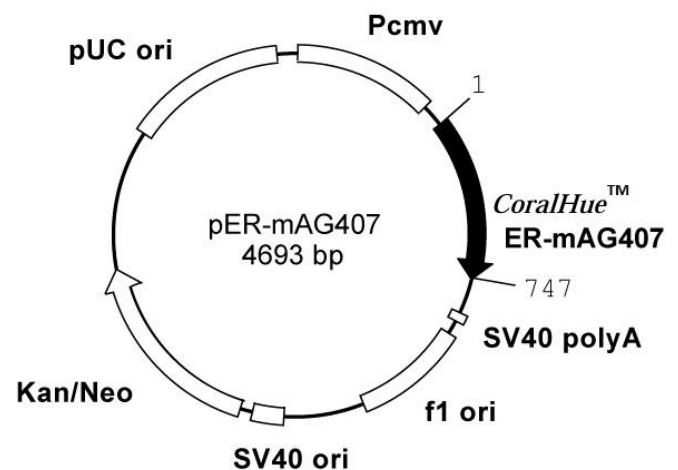
For Research Use Only. Not for use in diagnostic procedures.

#### REFERENCES:

- 1) Karasawa, S., *et al.*, *J. Biol. Chem.* **278**, 34167-71 (2003)
- 2) Miyawaki, A., *et al.*, *Nature* **388**, 882-887 (1997)

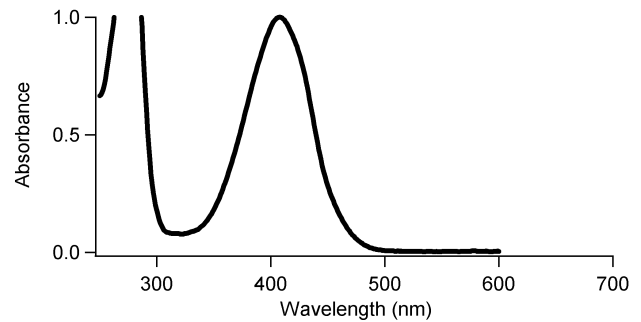
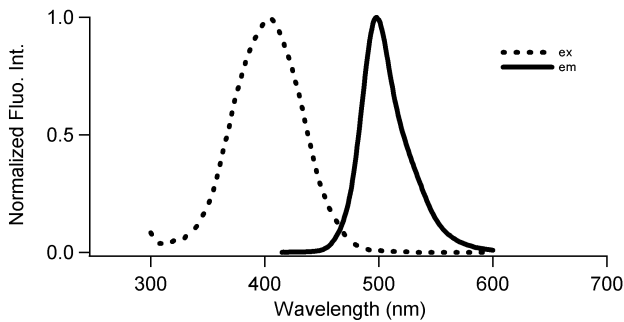
#### RELATED PRODUCT:

AM-V0504M *CoralHue*<sup>TM</sup> humanized monomeric Azami-Green407 (phmAG407-S1)



**CoralHue™ mAG407**: 226 amino acids (without ER signal sequence)

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M <sup>-1</sup> cm <sup>-1</sup> )	Fluorescence Quantum Yield	pH sensitivity
mAG407	407/498	25,150 (407 nm)	0.54	pK <sub>a</sub> <4



**CoralHue™ ER-mAG407**

1) DNA sequence

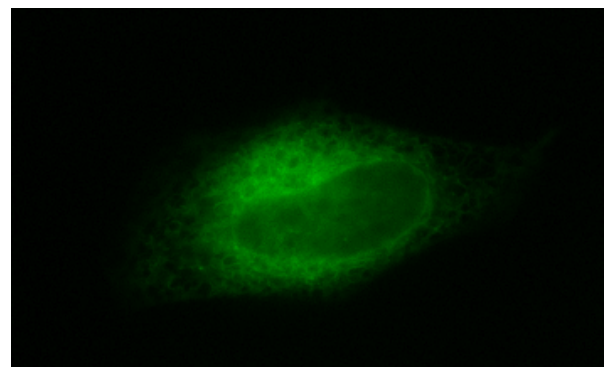
ATGCTGCTGCCCGTCCCCCTGCTGCTGGGCCTGCTGGGCGCCGCCG  
CGGATCCGATGGT GAGTGTGATTAACCAGAGATGAAGATCAAGCT  
GTGTATGAGAGGCACTGTAACGGGCATAATTTCTGTGATTGAAGGA  
GAAGGAAAAGGAAATCCTTACGAGGGAACGCAGATTTTAGACCTGA  
ACGTCACTGAAGGGCACCTCTGCCTTTCGCTTACGATATCTTGAC  
AACAGTGTCCAGTACGGCAACAGGGCATTACCAAGTACCCAGCA  
GATATTCAGGACTATTTCAAGCAGACTTTTCTGAGGGGTATCACT  
GGGAAAGAAGCATGACTTATGAAGACCAGGGCATTTCACCGCCAC  
AAGCAACATAAGCATGAGGGGCGACTGTTTTTCTATGACATTCGT  
TTTGATGGCACCAACTTCTCCCAATGGTCCGGTTATGCAGAAGA  
AGACTCTTAAATGGGAGCCAGACACTGAGAAAATGTACGTAGAGGA  
TGGAGTGCTGAAGGGTGATGTTAACATGCGCCTGTTGCTTGAAGGA  
GGTGGCCATTATCGATGTGATGTCAAACACTTACAAAGCAAAGA  
AGGAGGTCCGTTTGCCAGACGGCACAATAATTGACCACCGCATTGA  
GATTTTGAAGCATGACAAAGATTACAACAAGGTCAAGCTCTATGAG  
AATGCCGTTGCTCGCTATTCTATGCTGCCGAGTCAGGCCAAGAAGG  
ACGAGCTG

(Underlined sequences in red are from calreticulin.)

2) Amino acid sequence

MLLPVPLLLGLLGAAADPMVSVIKPEMKIKLCMRGTVNGHNFVIEG  
EGKGNPYEGTQILDNLNTEGAPLPFAYDILTTVFQYGNRAFTKYPA  
DIQDYFKQTFPEGYHWERSMTYEDQGICTATSNISMRGDCFFYDIR  
FDGTFNFPNGPVMQKTKLWEPDTEKMYVEDGVLKGDVNMRLLEGG  
GGHYRCDVKTTYKAKKEVRLPDAHKIDHRIEILKHDKDYNKVKLYE  
NAVARYSMLPSQAKKDEL

(Underlined sequences in red are from calreticulin.)



**CoralHue™ ER-mAG407 expression in a HeLa cell.**

**CoralHue™ ER-mAG407** is a product of co-development with Dr. Atsushi Miyawaki at the Laboratory for Cell Function and Dynamics, the Brain Science Institute, and the Institute of Physical and Chemical Research (RIKEN).

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