

## Fluorescent Protein Expression Plasmid

*CoralHue*<sup>®</sup>

### ER-targeted mAG1 Expression Plasmid (pER-mAG1)

Code No.  
AM-V0202

Quantity  
20 µg

**BACKGROUND:** This plasmid is designed for expression of endoplasmic reticulum (ER)-targeted *CoralHue*<sup>®</sup> monomeric Azami Green 1 (mAG1) in mammalian cells. *CoralHue*<sup>®</sup> AG, which was originally cloned from the stony coral whose Japanese name is "Azami-Sango," absorbs light maximally at 492 nm and emits green light at 505 nm. Unlike many other fluorescent proteins, *CoralHue*<sup>®</sup> mAG1 is stable in both acidic and basic conditions without significant loss of the fluorescence. Targeting of mAG1 to the ER is achieved with the signal peptide and ER-retention sequence (Lys-Asn-Glu-Leu) of calreticulin fused to the N- and C-terminus of mAG1, respectively.

**SOURCE:** The *CoralHue*<sup>®</sup> AG gene was originally 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>®</sup> ER-mAG1 (Including Stop Codon): 1-747  
CMV Promoter: 4091-4663  
SV40 Poly A: 907-941  
Kan/Neo Resistance Gene: 1984-2775  
pUC Origin: 3363-4006  
f1 Origin: 1004-1459  
SV40 Origin: 1800-1935

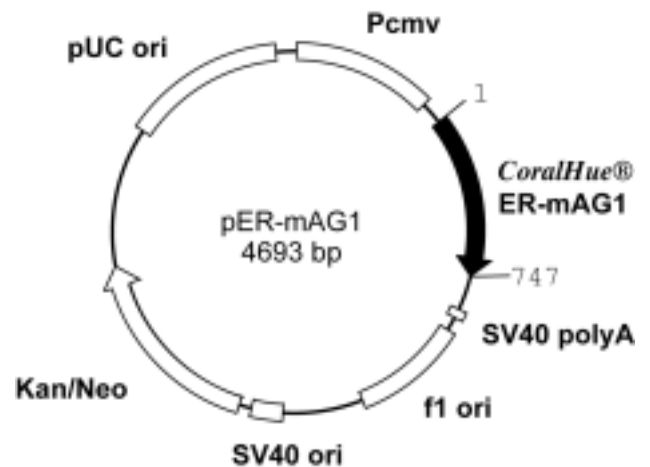
**INTENDED USE:** For research use only. Not for clinical or diagnostic use.

#### REFERENCES:

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

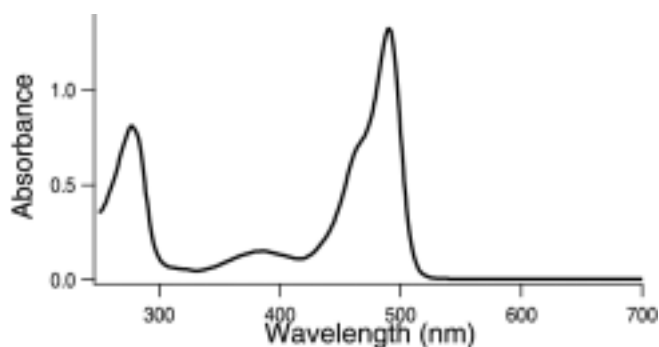
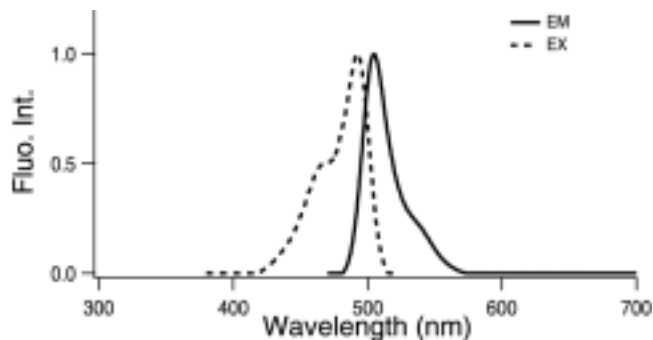
#### GenBank:

Accession Numbers: AB107915, AB108447



**CoralHue<sup>®</sup> ER-mAG1:** 248 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M <sup>-1</sup> cm <sup>-1</sup> )	Fluorescence Quantum Yield	pH sensitivity
mAG1	492/505	55,500 (492 nm)	0.74	pKa=5.8



**CoralHue<sup>®</sup> ER-mAG1 DNA Sequence**

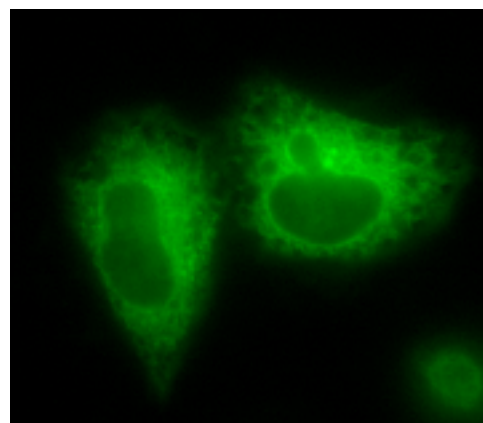
ATGCTGCTGCCCGTCCCCCTGCTGCTGGGCCTGCTGGGCGCCGCCG  
CGGATCCGATGGTGAGTGTGATTAACCAGAGATGAAGATCAAGCT  
 GTGTATGAGAGGCACTGTAACCGGCATAATTCGTGATTGAAGGA  
 GAAGGAAAAGGAAATCCTTACGAGGGAACGCAGATTTTAGACCTGA  
 ACGTCACTGAAGGCGCACCTCTGCCTTTCGCTTACGATATCTTGAC  
 AACAGTGTTCAGTACGGCAACAGGGCATTACCAAGTACCCAGCA  
 GATATTCAGGACTATTTCAAGCAGACTTTTCTGAGGGGTATCACT  
 GGGAAAGAAGCATGACTTATGAAGACCAGGGCATTTCACCGCCAC  
 AAGCAACATAAGCATGAGGGGCGACTGTTTTTCTATGACATTCGT  
 TTTGATGGCACCAACTTCTCCCAATGGTCCGGTTATGCAGAAGA  
 AGACTCTTAAATGGGAGCCATCCACTGAGAAAATGTACGTAGAGGA  
 TGGAGTGCTGAAGGGTATGTTAACATGCGCCTGTTGCTTGAAGGA  
 GGTGGCCATTATCGATGTGATTTCAAACACTTACAAAGCAAAGA  
 AGGAGGTCCGTTTGCCAGACGCGCACAAAATTGACCACCGCATTGA  
 GATTTGAAGCATGACAAAGATTACAACAAGGTCAAGCTCTATGAG  
 AATGCCGTTGCTCGCTATTCTATGCTGCCGAGTCAGGCCAAGAAGG  
ACGAGCTGtaa

(Underlined sequences in red are from calreticulin.)

**CoralHue<sup>®</sup> ER-mAG1 Amino Acid Sequence**

MLLPVPLLLGLLGAADPMVSVIKPEMKIKLCMRGTVNGHNFVIEG  
 EGKGNPYEGTQILDNLNTEGAPLPFAYDILTTVFQYGNRAFTKYPA  
 DIQDYFKQTFPEGYHWERSMTYEDQGITATSNI SMRGDCFFYDIR  
 FDGTNFPNGPVMQKKTLLKWEPESTEKMYVEDGVLKGDVNMRLLEG  
 GGHYRCDFKTTYKAKKEVRLPDAHKIDHRIELKHDKDYNKVKLYE  
 NAVARYSMLPSQAKKDEL\*

(Underlined sequences in red are from calreticulin.)



**CoralHue<sup>®</sup> ER-mAG1 expression in HeLa cells**

Fluorescent protein **CoralHue<sup>®</sup> ER-mAG1** used in this product was co-developed with the Laboratory for Cell Function and Dynamics, the Advanced Technology Development Center, the Brain Science Institute, and the Institute of Physical and Chemical Research (RIKEN) (lab head Dr. Atsushi Miyawaki).

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PATENT PENDING  
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