

Fluorescent Protein Expression Plasmid

CoralHue[®]

ER-targeted monomeric Azami-Green 1 (pER-mAG1)

Code No.
AM-V0202M

Quantity
20 µg

BACKGROUND: This plasmid is designed for expression of endoplasmic reticulum (ER)-targeted *CoralHue*[®] monomeric Azami-Green 1 (mAG1) in mammalian cells. *CoralHue*[®] Azami-Green (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*[®] 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*[®] 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[®] ER-mAG1 (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

REFERENCES:

- 1) Karasawa, S., *et al.*, *J. Biol. Chem.* **278**, 34167-34171 (2003)
- 2) Miyawaki, A., *et al.*, *Nature* **388**, 882-887 (1997)

INTENDED USE:

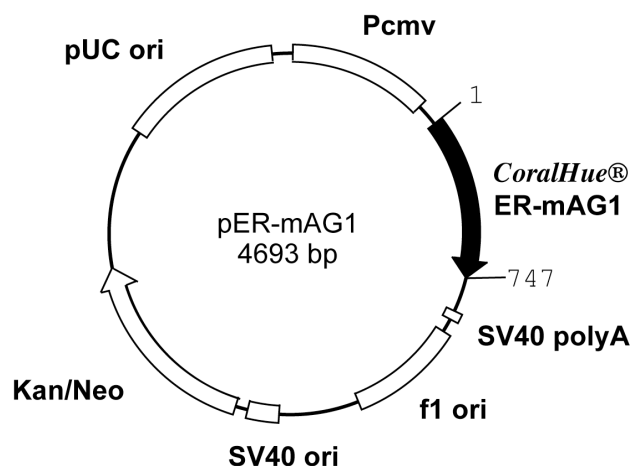
For Research Use Only. Not for use in diagnostic procedures.

GenBank:

Accession Numbers: AB107915, AB108447

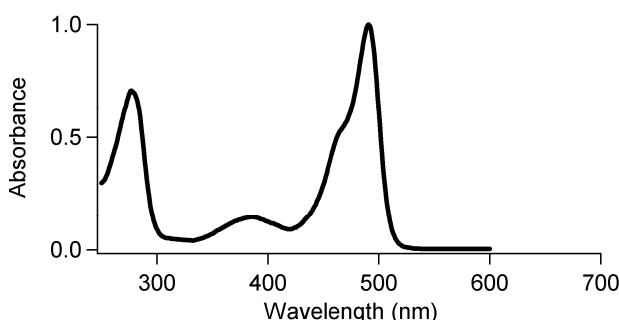
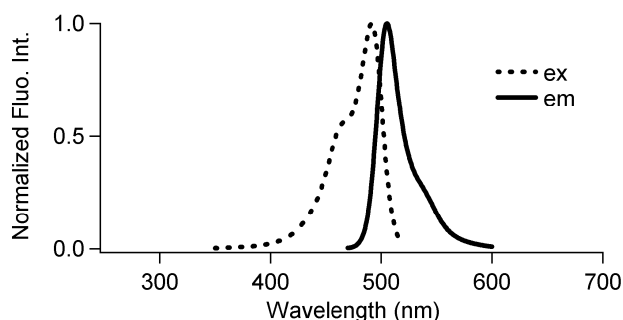
RELATED PRODUCTS:

- AM-V0201M *CoralHue*[®] Mitochondria-targeted monomeric Azami-Green 1
AM-V0203M *CoralHue*[®] Plasma Membrane-targeted monomeric Azami-Green 1
AM-V0205M *CoralHue*[®] β-Actin targeted monomeric Azami-Green 1
AM-V0214M *CoralHue*[®] Nucleoplasm-targeted Azami-Green 1



CoralHue[®] mAG1: 226 amino acids (without ER signal sequence)

| | Excit./Emiss.Maxima (nm) | Extinction Coefficient($M^{-1}cm^{-1}$) | Fluorescence Quantum Yield | pH sensitivity |
|------|--------------------------|---|----------------------------|------------------|
| mAG1 | 492/505 | 55,500 (492 nm) | 0.74 | p <i>K</i> a=5.8 |



CoralHue[®] ER-mAG1

1) DNA sequence

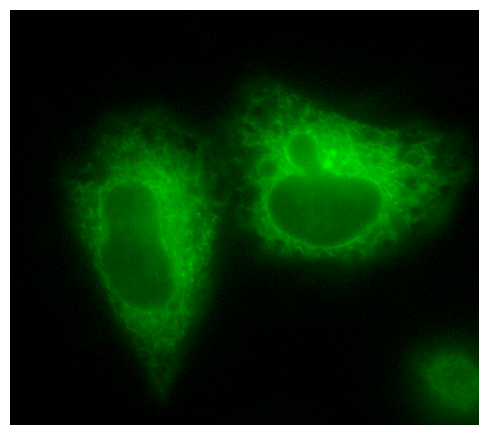
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CGGATCCGATGGT GAGTGTGATTAACCAGAGATGAAGATCAAGCT
 GTGTATGAGAGGCACTGTAACGGGCATAATTTTCGTGATTGAAGGA
 GAAGGAAAAGGAAATCCTTACGAGGGAACGCAGATTTTAGACCTGA
 ACGTCACTGAAGGGCACCTCTGCCTTCGCTTACGATATCTTGAC
 AACAGTGTTCCAGTACGGCAACAGGGCATTACCAAGTACCCAGCA
 GATATTCAGGACTATTTCAAGCAGACTTTTCTGAGGGGTATCACT
 GGGAAAGAAGCATGACTTATGAAGACCAGGGCATTTCACCGCCAC
 AAGCAACATAAGCATGAGGGGCGACTGTTTTTCTATGACATTCGT
 TTTGATGGCACCAACTTTCTCCAATGGTCCGGTTATGCAGAAGA
 AGACTCTTAAATGGGAGCCATCCACTGAGAAAATGTACGTAGAGGA
 TGGAGTGCTGAAGGGT GATGTTAACATGCGCCTGTTGCTTGAAGGA
 GGTGGCCATTATCGATGTGATTTCAAACACTACTTACAAAGCAAAGA
 AGGAGGTCCGTTTGCCAGACGCGCACAAAATTGACCACCGCATTGA
 GATTTTGAAGCATGACAAAGATTACAACAAGGTCAAGCTCTATGAG
 AATGCCGTTGCTCGCTATTCTATGCTGCCGAGTCAGGCCAAGAAGG
ACGAGCTG

(Underlined sequences in red are from calreticulin.)

2) Amino acid sequence

MLLPVPLLLGLLGAADPMVSVIKPEMKIKLCMRGTVNGHNFVIEG
 EGKGNPYEGTQILDNLNTEGAPLPFAYDILTTVFQYGNRAFTKYPA
 DIQDYFKQTFPEGYHWERSMTYEDQGICTATSNISMRGDCFFYDIR
 FDGTFNPPNGPVMQKTLKWEPESTEKMYVEDGVLKGDVNMRLLEG
 GGHYRCDFKTTYKAKKEVRLPDAHKIDHRIEILKHKDYNKVLYE
 NAVARYSMLPSQAKKDEL

(Underlined sequences in red are from calreticulin.)



CoralHue[®] ER-mAG1 expression in HeLa cells.

CoralHue[®] mAG 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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