

Fluorescent Protein Expression Vector

CoralHue[®]

humanized monomeric Umikinoko-Green 1 (phmUkG1-MC1)

Code No.
AM-V0165M

Quantity
20 µg

BACKGROUND: The plasmid DNA encodes a monomeric version of the fluorescent protein **CoralHue[®]** Umikinoko-Green 1 (UkG1). **CoralHue[®]** UkG1 has been cloned from the soft coral, whose Japanese name is "Umikinoko". **CoralHue[®]** UkG1 has been engineered to form a monomer, **CoralHue[®]** monomeric Umikinoko-Green 1 (mUkG1) that absorbs light maximally at 483 nm and emits green light at 499 nm. **CoralHue[®]** mUkG1 exhibit the brilliant fluorescence and extremely high pH stability. mUkG1 can be used to label proteins or subcellular structures or for FRET analysis. **CoralHue[®]** hmUkG1 sequence is codon-optimized for higher expression in mammalian cells. This expression plasmid is designed for insertion of a target gene downstream of **CoralHue[®]** hmUkG1 sequence.

SOURCE: The **CoralHue[®]** UkG1 gene was originally cloned from the soft coral (*Sarcophyton* sp.).

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

PURITY: A260/A280 > 1.5

STORAGE: Stored at -20°C

SEQUENCE LANDMARKS:

CoralHue[®] hmUkG1 gene: bases 1-681
CMV promoter: bases 4090-4662
SV40 polyA: bases 900-934
Kanamycin/Neomycin resistance gene: bases 1977-2768
pUC origin: bases 3356-3999
f1 origin: bases 997-1452
SV40 origin: bases 1793-1928

INTENDED USE:

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

REFERENCE:

Tsutsui, H., *et al.*, *Nat. Methods.* **5**, 683-685 (2008)

Gen Bank:

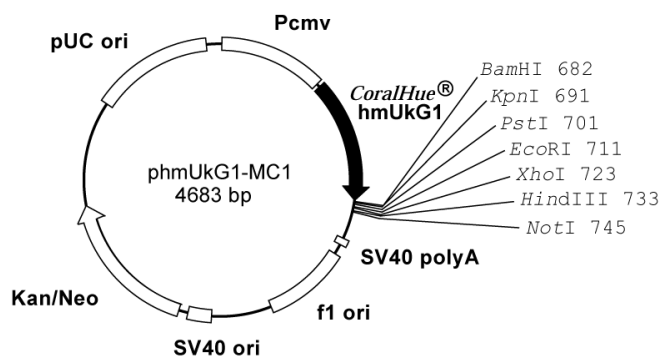
Accession Numbers: AB425088

NOTICES:

- 1) Val is inserted to second amino acid of **CoralHue[®]** hmUkG1 to form kozak sequence. (The corresponding nucleotide sequence is GTG.)
- 2) It is highly recommended to add stop codon at 3'-terminus of a cDNA when a cDNA is inserted using NotI site. Some cDNA frame might not work in this construct without addition of stop codon.

RELATED PRODUCTS:

- AM-V0161M **CoralHue[®]** monomeric Umikinoko-Green 1 (phmUkG1-S1)
AM-V0164M **CoralHue[®]** humanized monomeric Umikinoko-Green 1 (phmUkG1-S1)
AM-V0166M **CoralHue[®]** humanized monomeric Umikinoko-Green 1 (phmUkG1-MN1)



CoralHue[®]
hmUkG1 | 681 | 760
...GCCAGCAAG | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI |
... A S K G S S G T G T A A E N S G N S R T K L E stop c t a g

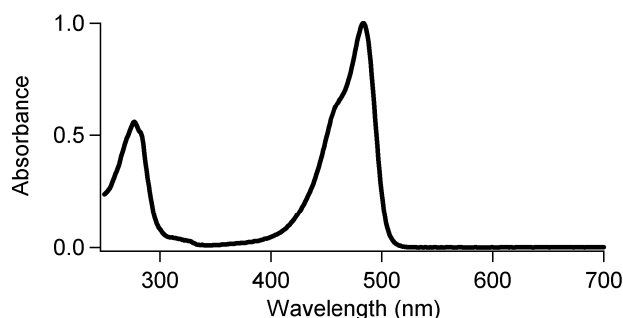
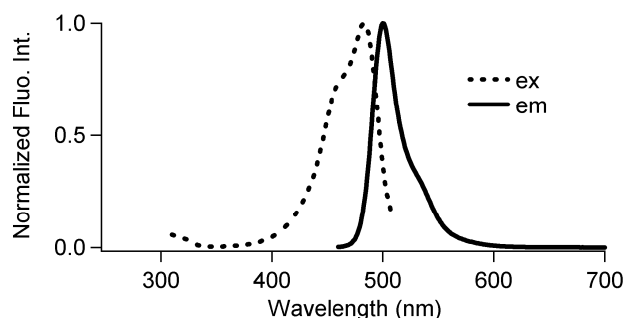
Amalgaam

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CoralHue[®] mUkG1: 227 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M-1cm-1)	Fluorescence Quantum Yield	pH sensitivity
mUkG1	483/499	60,000 (483 nm)	0.72	pK _a =5.2



CoralHue[®] hmUkG1

1) DNA sequence

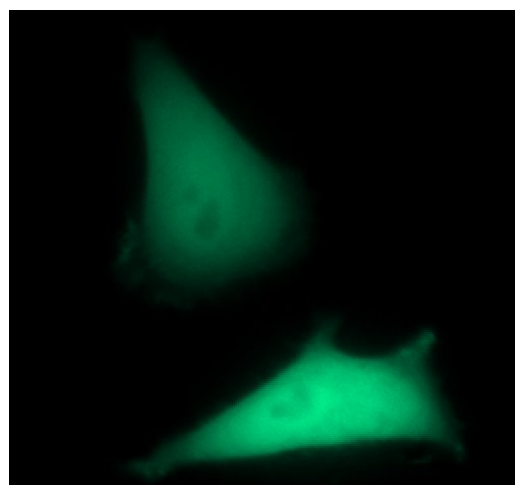
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GTGAAGGAGGGCGCCCCCTGCCCTTCAGCTACGACATCCTGAC
CAACGCCTTCCAGTACGGCAACCGCGCCTTCACCAAGTACCCCG
CCGACATCCCGACTACTTCAAGCAGACCTTCCCGAGGGCTAC
AGCTGGGAGCGCACCATGAGCTACGAGGACAACGCCATCTGCAA
CGTGCGCAGCGAGATCAGCATGGAGGGCGACTGCTTCATCTACA
AGATCCGCTTCGACGGCAAGAACTTCCCCCAACGGCCCCGTG
ATGCAGAAGAAGACCCTGAAGTGGGAGCCCAGCACCGAGATGAT
GTACGTGCGGACGGCTTCCTGATGGGCGACGTGAACATGGCCC
TGCTGCTGGAGGGCGGGCCACCACCGCTGCGACTTCAAGACC
AGCTACAAGGCCAAGAAGGTGGTGCAGCTGCCCGACGCCACAA
GATCGACCACCGCATCGAGATCCTGAGCCACGACCGGACTACA
GCAAGGTGAAGCTGTACGAGAACGCCGTGGCCGGCAACAGCCTG
CTGCCAGCCAGGCCAGCAAG
    
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2) Amino acid sequence

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MVSVIKEEMKIKLHMEGNVNGHAFVIEGDGKPKPYDGTQTLNLT
VKEGAPLPFSYDILTNAFQYGNRAFTKYPADIPDYFKQTFPEGY
SWERTMSYEDNAICNVRSEISMEGDCFYKIRFDGKNFPPNGPV
MQKKTCLKWEPSTEMMYVRDGFMLMGDVNMALLLEGGGHRCDFKT
SYKAKKVVQLPDAHKIDHRIEILSHDRDYSKVKLYENAVARNSL
LPSQASK
    
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CoralHue[®] hmUkG1 expressing in HeLa cells.

CoralHue[®] hmUkG1 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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