

Fluorescent Protein Expression vector

CoralHue[®]

humanized monomeric Umikinoko-Green 1 (phmUkG1-MN1)

Code No.
AM-V0166M

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 upstream 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 79-759
CMV promoter: bases 4112-4684
SV40 polyA: bases 922-956
Kanamycin/Neomycin resistance gene: bases 1999-2790
pUC origin: bases 3378-4021
f1 origin: bases 1019-1474
SV40 origin: bases 1815-1950

INTENDED USE:

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

REFERENCE:

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

GenBank:

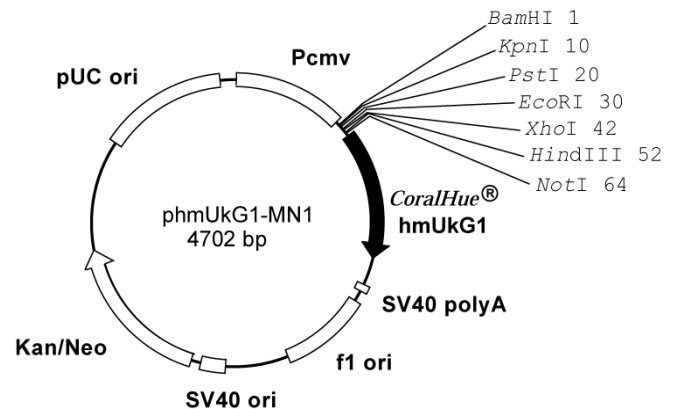
Accession Numbers: AB425088

NOTICE:

Val is inserted to second amino acid of *CoralHue*[®] hmUkG1 to form kozak sequence. (The corresponding nucleotide sequence is GTG.)

RELATED PRODUCTS:

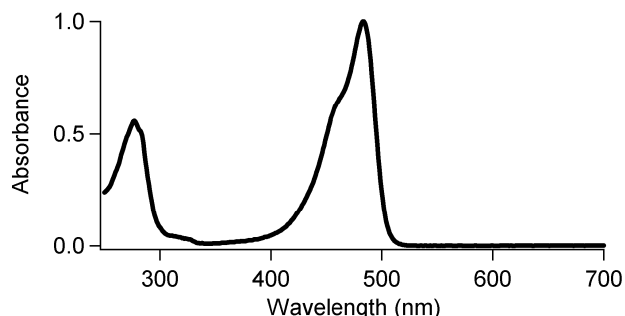
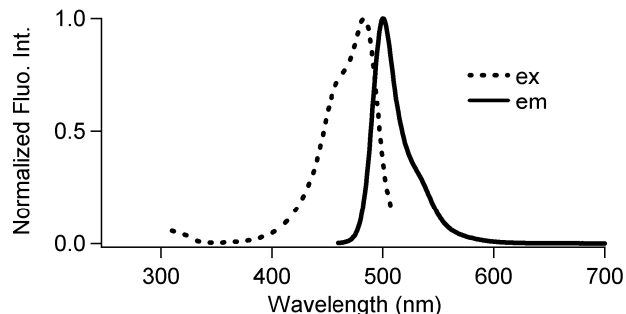
- AM-V0161M *CoralHue*[®] monomeric Umikinoko-Green 1 (phmUkG1-S1)
- AM-V0164M *CoralHue*[®] humanized monomeric Umikinoko-Green 1 (phmUkG1-S1)
- AM-V0165M *CoralHue*[®] humanized monomeric Umikinoko-Green 1 (phmUkG1-MC1)



1 | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI | 79 | *CoralHue*[®] hmUkG1
gga tcc tca ggt acc gga act gca gca gag aat tcg gga aac tcg aga aca aag ctt gga tca gcg gcc gcg ggg acc atg gtg agt
G S S G T G T A A E N S G N S R T K L G S A A A G T M V S

CoralHue[®] mUkG1: 227 amino acids

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



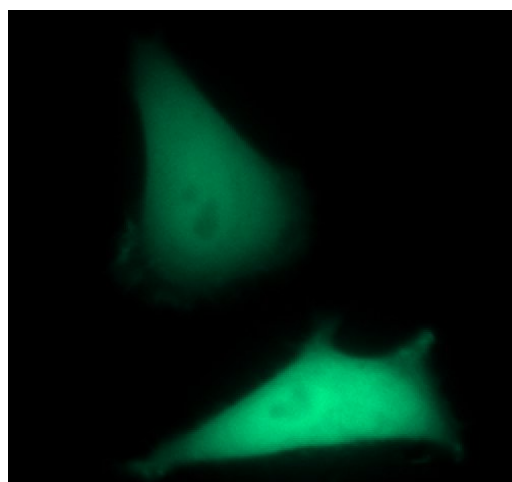
CoralHue[®] hmUkG1

1) DNA sequence

ATGGTGAGCGTGATCAAGGAGGAGATGAAGATCAAGCTGCACAT
GGAGGGCAACGTGAACGGCCACGCCTTCGTGATCGAGGGCGACG
GCAAGGGCAAGCCCTACGACGGCACCAGACCCTGAACCTGACC
GTGAAGGAGGGCGCCCCCTGCCCTTCAGCTACGACATCCTGAC
CAACGCCTTCAGTACGGCAACCGCGCCTTCACCAAGTACCCCG
CCGACATCCCGACTACTTCAAGCAGACCTTCCCGGAGGGCTAC
AGCTGGGAGCGCACCATGAGCTACGAGGACAACGCCATCTGCAA
CGTGCGCAGCGAGATCAGCATGGAGGGCGACTGCTTCATCTACA
AGATCCGCTTCGACGGCAAGAACTTCCCCCAACGGCCCCGTG
ATGCAGAAGAAGACCCTGAAGTGGGAGCCCAGCACCGAGATGAT
GTACGTGCGGACGGCTTCCTGATGGGCGACGTGAACATGGCCC
TGCTGCTGGAGGGCGGGCCACCACCGCTGCGACTTCAAGACC
AGCTACAAGGCCAAGAAGGTGGTGCAGCTGCCCGACGCCACAA
GATCGACCACCGCATCGAGATCCTGAGCCACGACCGGACTACA
GCAAGGTGAAGCTGTACGAGAACGCCGTGGCCGGCAACAGCCTG
CTGCCAGCCAGGCCAGCAAG

2) Amino acid sequence

MVSVIKEEMKIKLHMEGNVNGHAFVIEGDGKPKPYDGTQTLNLT
VKEGAPLPFSYDILTNAFQYGNRAFTKYPADIPDYFKQTFPEGY
SWERTMSYEDNAICNVRSEISMEGDCFYKIRFDGKNFPPNGPV
MQKTLKWEPESTEMMYVRDGFMLMGDVNMALLLEGGGHRCDFKT
SYKAKKVVQLPDAHKIDHRIEILSHDRDYSKVKLYENAVARNSL
LPSQASK



CoralHue[®] hmUkG1 expression 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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