

Fluorescent Protein Expression Vector

CoralHue®

humanized Kusabira-Orange 1 (phKO1-MC1)

Code No.
AM-V0045M

Quantity
20 µg

BACKGROUND: This plasmid encodes the fluorescent protein **CoralHue®** Kusabira-Orange 1 (KO1), which was cloned from the stony coral whose Japanese name is "Kusabira-ishi." KO1 absorbs light maximally at 548 nm and emits orange light at 561 nm. Wild-type **CoralHue®** KO1 rapidly matures to form a fluorescent dimeric complex. **CoralHue®** humanized Kusabira-Orange 1 (hKO1) can be used to mark cells or as a reporter for gene expression without problems stemming from protein aggregation. This expression plasmid is designed for insertion of a target gene downstream of the **CoralHue®** hKO1 sequence. The **CoralHue®** hKO1 sequence is codon-optimized for higher expression in mammalian cells.

SOURCE: The original **CoralHue®** KO1 gene was cloned from the stony coral (*Fungia concinna*).

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

PURITY: A260/A280 > 1.5

STORAGE: To be stored at -20°C.

SEQUENCE LANDMARKS:

CoralHue® hKO1 gene: bases 1-654
CMV promoter: bases 4063-4635
SV40 polyA: bases 873-907
Kanamycin/Neomycin resistance gene: bases 1950-2741
pUC origin: bases 3329-3972
f1 origin: bases 970-1425
SV40 origin: bases 1766-1901

INTENDED USE:

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

REFERENCE:

Karasawa, S., *et al.*, *Biochem J.* **381**, 307-312 (2004)

GenBank:

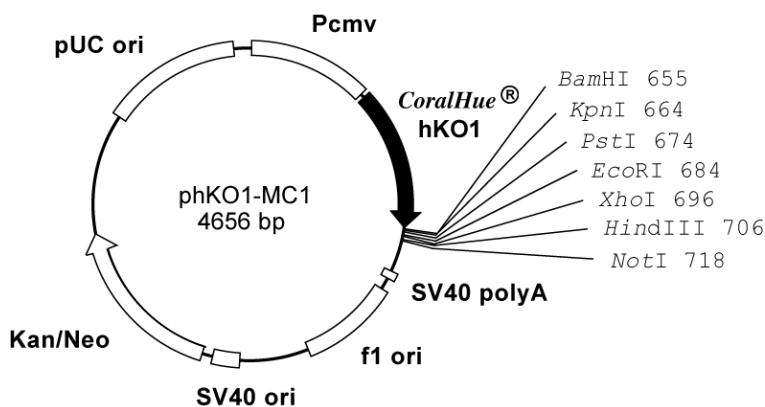
Accession Numbers: AB128819, AB128821

NOTICES:

- 1) A Val codon is inserted between those for the first and second amino acids of the wild type **CoralHue®** KO1 to form the kozak sequence. (The corresponding nucleotide sequence for this Val is GTG.)
- 2) It is highly recommended to add a stop codon at the 3'-terminus of the cDNA being inserted if the *Not* I site is to be used. Some cDNA frame might not work in this construct without addition of a stop codon.

RELATED PRODUCTS:

AM-V0041M **CoralHue®** Kusabira-Orange 1 (pKO1-S1)
AM-V0044M **CoralHue®** humanized Kusabira-Orange 1 (phKO1-S1)
AM-V0046M **CoralHue®** humanized Kusabira-Orange 1 (phKO1-MN1)



CoralHue®
hKO1
... GCCCACTGC BamHI KpnI PstI EcoRI XhoI HindIII NotI 733
... GGA TCC TCA GGT ACC GGA ACT GCA GCA GAG AAT TCG GGA AAC TCG AGA ACA AAG CTT GAA TAA GCG GCC GCG ACT CTA G
A H C G S S G T G T A A E N S G N S R T K L E stop

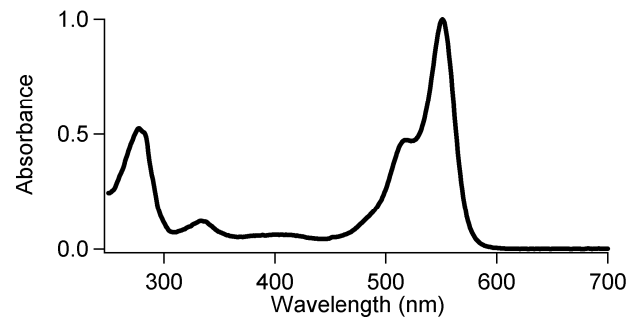
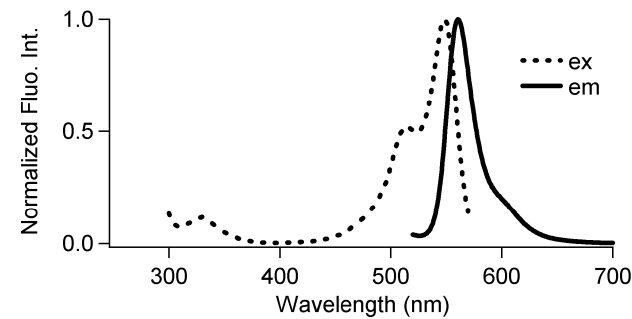
Amalgaam

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CoralHue[®] KO1: 218 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M ⁻¹ cm ⁻¹)	Fluorescence Quantum Yield	pH sensitivity
KO1	548/561	73,700 (548 nm)	0.45	pK a<5.0



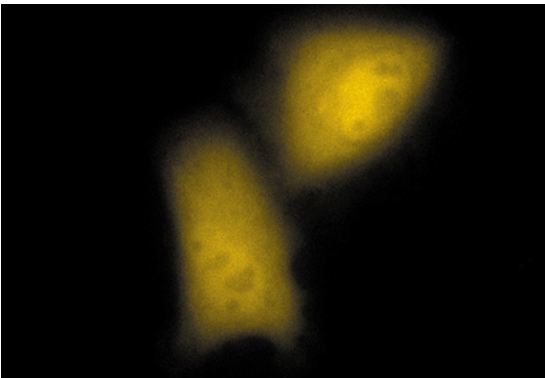
CoralHue[®] hKO1

1) DNA sequence

ATGGTGAGCGTGATCAAGCCCGAGATGAAGATGAAGTACTTCAT
GGACGGGAGCGTGAACGGCCACGAGTTCACCGTGGAGGGCGAGG
GCACCGGCAAGCCCTACGAGGGCCACAGGAGATGACCCTGAGG
GTGACAATGGCCAAGGGCGGCCCATGCCCTTCAGCTTCGACCT
GGTGAGCCACACCTTCTGCTACGGCCACAGGCCCTTCACCAAGT
ACCCCGAGGAGATCCCGACTACTTCAAGCAGGCCTTCCCGAG
GGCCTGAGCTGGGAGAGGAGCCTCCAGTTCGAGGACGGCGGCTT
CGCCGCCGTGAGCGCCACATCAGCCTGAGGGGCAACTGCTTCG
AGCACAAGAGCAAGTTCTGTTGGCGTGAAGTTCGCCGCCGACGGC
CCCGTGATGCAGAACCAGAGCAGCGACTGGGAGCCAGCACCAG
GAAGATCACCACTGCGACGGCGTGTGAAGGGCGAGGTGACCA
TGTACCTGAAGCTGGCCGGCGCGGCAACCACAAGTGCCAGTTC
AAGACCACCTACAAGGCCGCAAGAAGATCCTGAAGATGCCCCA
GAGCCACTTCATCGGCCACAGGCTGGTGAGGAAGACCGAGGGCA
ACATCACCGAGCTGGTGGAGGACGCCGTGGCCCACTGC

2) Amino acid sequence

MVSVIKPEMKMKYFMDGSVNGHEFTVEGEGTGKPYEGHQEMTLR
VTMAKGGPMPFSFDLVSHTCYGHRPFTKYPEEIPDYFKQAFPE
GLSWERSLQFEDGGFAAVSAHISLRGNCFEHKSKFVGVNFPADG
PVMQNGSSDWEPTSEKITTCGVLKGDVTMYLKLAGGGNHKCQF
KTTYKAAKKILKMPQSHFIGHRLVRKTEGNITELVEDAVAHC



CoralHue[®] hKO1 expression in HeLa cells.

CoralHue[®] hKO1 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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