

Fluorescent Protein Expression Vector

CoralHue[®]

humanized monomeric Kusabira-Orange 1 (phmKO1-MCL)

Code No.
AM-V0059M

Quantity
20 µg

BACKGROUND: The plasmid DNA encodes a monomeric version of the fluorescent protein **CoralHue[®]** Kusabira-Orange 1 (KO1). KO1 has been cloned from the stony coral, whose Japanese name is "Kusabira-ishi". It absorbs light maximally at 548 nm and emits orange light at 561 nm. Wild-type **CoralHue[®]** KO1 rapidly matures to form a brightly fluorescent dimer. **CoralHue[®]** KO1 has been carefully engineered to form a monomer, **CoralHue[®]** monomeric Kusabira Orange 1 (mKO1) that maintains the brilliance and pH stability of the parent protein. **CoralHue[®]** mKO1 can be used to label proteins or subcellular structures or for FRET analysis. **CoralHue[®]** hmKO1 sequence is codon-optimized for higher expression in mammalian cells. This plasmid has the flexible linker between fluorescence protein and multiple cloning site.

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

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

PURITY: A260/A280 > 1.5

STORAGE: Stored at -20°C

SEQUENCE LANDMARKS:

CoralHue[®] hmKO1 gene: bases 1-654
peptide linker: bases 655-726
CMV promoter: bases 4132-4704
SV40 polyA: bases 942-976
Kanamycin/Neomycin resistance gene: bases 2019-2810
pUC origin: bases 3398-4041
f1 origin: bases 1039-1494
SV40 origin: bases 1835-1970

INTENDED USE:

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

REFERENCE:

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

GenBank:

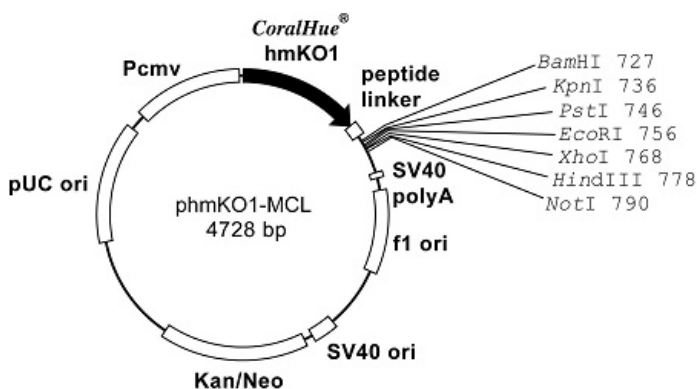
Accession Numbers: AB128819, AB128821

NOTICES:

- 1) Val is inserted to second amino acid of **CoralHue[®]** hmKO1 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-V0050M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MNL)
AM-V0054M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-S1)
AM-V0055M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MC1)
AM-V0056M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MN1)



peptide linker 726 805
| BamHI KpnI PstI EcoRI XhoI HindIII NotI |
... acc caa gga 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
T Q G G S S G T G T A A E N S G N S R T K L E stop

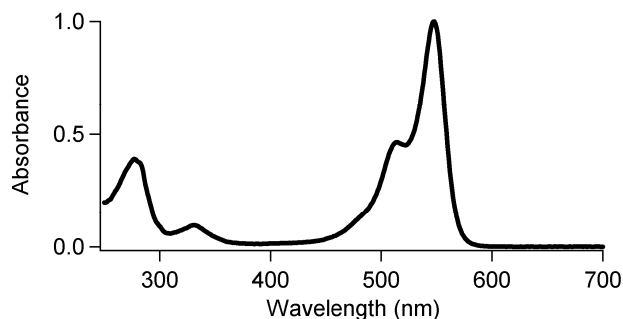
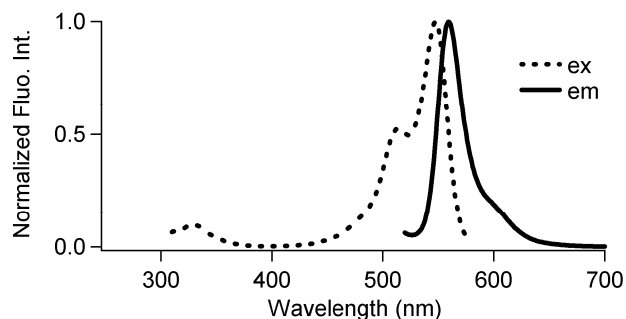
Amalgaam

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CoralHue[®] mKO1: 218 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M-1cm-1)	Fluorescence Quantum Yield	pH sensitivity
mKO1	548/559	51,600 (548 nm)	0.60	pKa=5.0



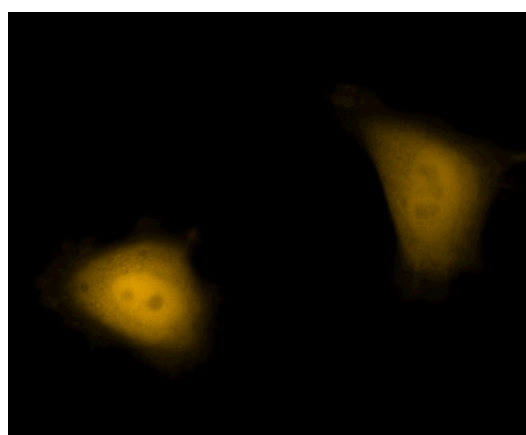
CoralHue[®] hmKO1/linker

1) DNA sequence

ATGGTGAGCGTGATCAAGCCGAGATGAAGATGAGGTACTACAT
GGACGGCTCCGTCAATGGGCATGAGTTCACAATCGAGGGTGAGG
GCACAGGCAGACCTTACGAGGGACATCAGGAGATGACACTGCGC
GTCACAATGGCCAAGGGCGGGCCAATGCCTTTCGCTTCGACCT
GGTGTCCCACGTGTTCTGTTACGGCCACAGACCTTTACTAAAT
ATCCAGAAGAGATCCAGACTATTTCAAGCAGGCCTTTCCTGAG
GGCCTGTCTGGGAGAGGTCCCTGGAGTTCGAGGACGGCGGCTC
CGCCTCCGTGAGCGCCACATCAGCCTGAGGGGCAACACCTTCT
ACCACAAGTCCAAGTTCACGGGCGTGAACCTCCCGCGGACGGC
CCCATCATGCAGAACCAGAGCGTGGACTGGGAGCCCTCCACCGA
GAAGATCACCGCCAGCGACGGCGTGCTGAAGGGCGACGTGACCA
TGTACCTGAAGCTGGAGGGGGCGGCAACCACAAGTGCCAGTTC
AAGACCACCTACAAGGCCGCAAGAAGATCCTGAAGATGCCCGG
CAGCCACTACATCAGCCACAGGCTGGTGAGGAAGACCGAGGGCA
ACATCACCGAGCTGGTGGAGGACGCCGTGGCCACTCCACCGGT
AATCCGCTGACGGCGGGGAGGATCGGGTGGTAGTGGTGGTTC
AGGAGGAGGATCGACCCAAGGA

2) Amino acid sequence

MVSVIKPEMKMRYMDGSVNGHEFTIEEGTGRPYEGHQEMTLR
VTMAKGGPMPFAFDLVSHVFCYGHRPFTKYPEEIPDYFKQAFPE
GLSWERSLEFEDGGASVSAHISLRGNTFYHKSFTGVNFPADG
PIMQNSVDWEPSTEKITASDGLKGDVTMYLKLEGGGNHKCQF
KTTYKAAKILKMPGSHYISHRLVRKTEGNITELVEDAVAHSTG
NSADGGGGSGGGGGGGSTQG



CoralHue[®] hmKO1 expression in HeLa cells.

CoralHue[®] hmKO1 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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