

Fluorescent Protein Expression Vector

CoralHue[®]

humanized monomeric Kusabira-Orange 1 (phmKO1-MC1)

Code No.
AM-V0055M

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 expression plasmid is designed for insertion of a target gene downstream of **CoralHue[®]** hmKO1 sequence.

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
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)

Gen Bank:

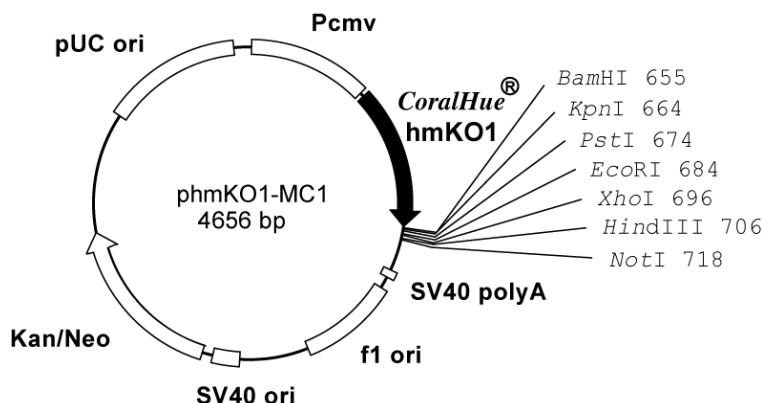
Accession Numbers: AB128819, AB128821

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-V0054M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-S1)
AM-V0056M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MN1)
AM-V0050M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MNL)
AM-V0059M **CoralHue[®]** humanized monomeric Kusabira-Orange 1 (phmKO1-MCL)



CoralHue[®] hmKO1 654
... GCCCACTCC | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI | 733
... G G A T C C A G A A C T G A C A A G C T T G A A T A G C C G C C G C G A C T C T A G
A H S G S S G T G T A A E N S G N S R T K L E stop

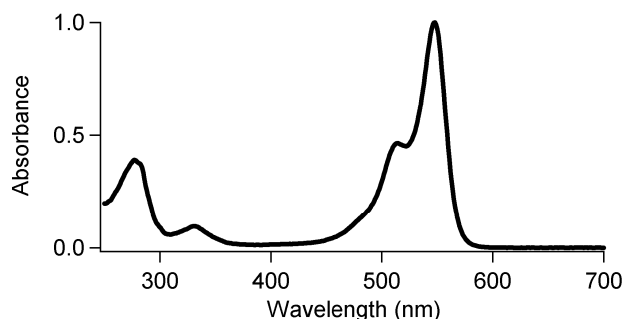
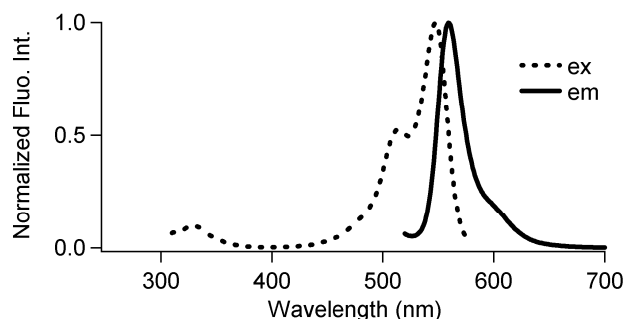
Amalgaam

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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



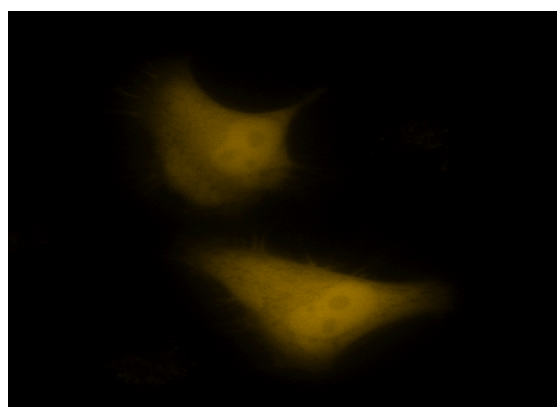
CoralHue[®] hmKO1

1) DNA sequence

ATGGTGAGCGTGATCAAGCCGAGATGAAGATGAGGTACTACAT
GGACGGCTCCGTCAATGGGCATGAGTTCACAATCGAGGGTGAGG
GCACAGGCAGACCTTACGAGGGACATCAGGAGATGACACTGCGC
GTCACAATGGCCAAGGGCGGGCCAATGCCTTTCGCCTTCGACCT
GGTGTCCCAGGTGTTCTGTTACGGCCACAGACCTTTTACTAAAT
ATCCAGAAGAGATCCAGACTATTTCAAGCAGGCCTTTCCTGAG
GGCCTGTCTGGGAGAGGTCCCTGGAGTTCGAGGACGGCGGCTC
CGCCTCCGTGAGCGCCACATCAGCCTGAGGGGCAACACCTTCT
ACCACAAGTCCAAGTTCACGGGCGTGAACCTCCCGCGGACGGC
CCCATCATGCAGAACCAGAGCGTGGACTGGGAGCCCTCCACCGA
GAAGATCACCGCCAGCGACGGCGTGCTGAAGGGGACGTTGACCA
TGTACCTGAAGCTGGAGGGGGCGGCAACCACAAGTGCCAGTTC
AAGACCACCTACAAGGCCGCAAGAAGATCCTGAAGATGCCCGG
CAGCCACTACATCAGCCACAGGCTGGTGAGGAAGACCGAGGGCA
ACATCACCGAGCTGGTGGAGGACGCCGTGGCCCACTCC

2) Amino acid sequence

MVSVIKPEMKMRYMDGSVNGHEFTIEEGTGRPYEGHQEMTLR
VTMAKGGPMPFAFDLVSHVFCYGHRPFTKYPEEIPDYFKQAFPE
GLSWERSLEFEDGGSSASVAHISLRGNTFYHKSFTGVNFPADG
PIMQNSVDWEPSTEKITASDGVCLKGDVTMYLKLEGGGNHKCQF
KTTYKAAKILKMPGSHYISHRLVRKTEGNITELVEDAVAHS



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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