

Fluorescent Protein Expression Vector

CoralHue[®]

monomeric Kusabira-Orange 1 (pmKO1-MC1)

Code No.
AM-V0052M

Quantity
20 µg

BACKGROUND: The plasmid DNA encodes a monomeric version of the fluorescent protein **CoralHue[®]** Kusabira-Orange 1 (KO1). **CoralHue[®]** 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. This expression plasmid is designed for insertion of a target gene downstream of the **CoralHue[®]** mKO1 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[®] mKO1 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

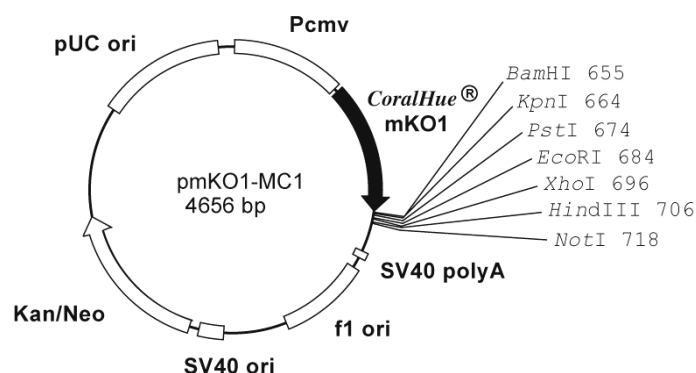
NOTICES:

- 1) Val is inserted to second amino acid of **CoralHue[®]** mKO1 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-V0051M **CoralHue[®]** monomeric Kusabira-Orange 1 (phmKO1-S1)

AM-V0053M **CoralHue[®]** monomeric Kusabira-Orange 1 (phmKO1-MN1)



CoralHue[®] mKO1 654 | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI | 733

... GCTCATTCC 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 S G S S G T G T A A E N S G N S R T K L E stop

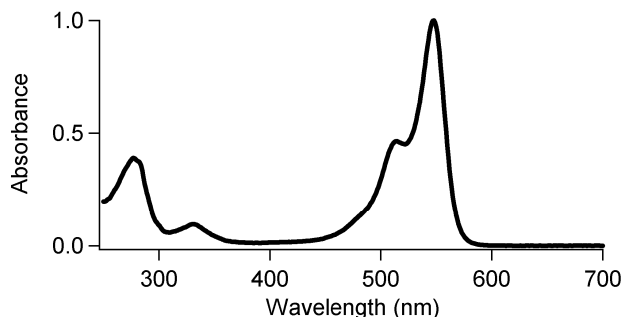
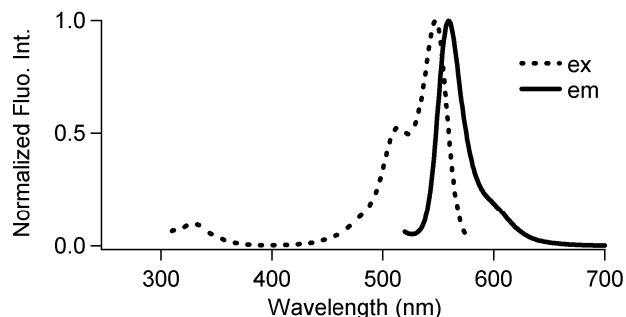
Amalgaam

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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



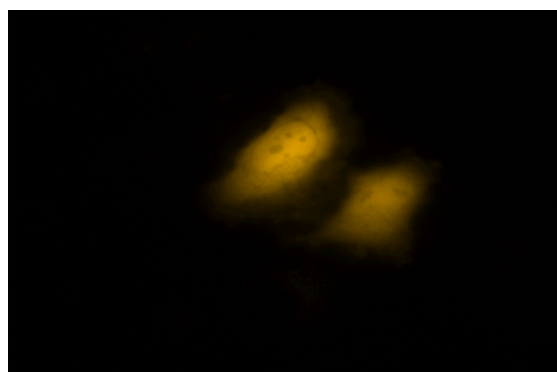
CoralHue[®] mKO1

1) DNA sequence

ATGGTGAGTGTGATTAACCCAGAGATGAAGATGAGGTACTACAT
GGACGGCTCCGTCAATGGGCATGAGTTCACAATTGAAGGTGAAG
GCACAGGCAGACCTTACGAGGGACATCAAGAGATGACACTACGC
GTCACAATGGCCAAGGGCGGGCCAATGCCTTTCGCGTTTGACTT
AGTGTACACAGTGTCTGTTACGGCCACAGACCTTTACTAAAT
ATCCAGAAGAGATACCAGACTATTTCAAACAAGCATTTCTGAA
GGCCTGTCATGGGAAAGGTGTTGGAGTTCGAAGATGGTGGGTC
CGCTTCAGTCAGTGCGCATATAAGCCTTAGAGGAAACACCTTCT
ACCACAAATCCAAATTTACTGGGGTTAAGCTTCTGCGGATGGT
CCTATCATGCAAAACCAAGTGTGATTGGGAGCCATCAACCGA
GAAAATTACTGCCAGCGACGGAGTTCTGAAGGGTGAAGTTACGA
TGTACCTAAAAGTTGAAGGAGGCGGCAATCACAAATGCCAATTC
AAGACTACTACAAGGCGGCAAAAAGATTCTTAAAATGCCAGG
AAGCCATTACATCAGCCATCGCCTCGTCAGGAAAACCGAAGGCA
ACATTACTGAGCTGGTAGAAGATGCAGTAGCTCATTCC

2) amino acid sequence

MVSVIKPEMKMRYMDGSVNGHEFTIEGEGTGRPYEGHQEMTLR
VTMAKGGPMPFAFDLVSHVFCYGHRPFTKYPEEIPDYFKQAFPE
GLSWERSLEFEDGGSASVSAHISLRGNTFYHKSFTGVNFPADG
PIMQNGSVDWEPSTEKITASDGLKGDVTMYLKLGGGNHKCQF
KTTYKAAKKILKMPGSHYISHRLVRKTEGNITELVEDAVAHS



CoralHue[®] mKO1 expression in HeLa cells.

CoralHue[®] mKO1 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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