

Fluorescent Protein Expression Vector

CoralHue[®]

humanized monomeric Kusabira-Orange 2 (phmKO2-MN1)

Code No.
AM-V0146M

Quantity
20 µg

BACKGROUND: The plasmid DNA encodes a monomeric version of the fluorescent protein **CoralHue[®]** Kusabira-Orange (KO). KO has been cloned from the stony coral, whose Japanese name is “Kusabira-ishi”. Wild-type **CoralHue[®]** KO forms a brightly fluorescent dimer. **CoralHue[®]** KO 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[®]** monomeric Kusabira-Orange 2 is the mutant of mKO1 and has a feature of the rapid maturation. It absorbs light maximally at 551 nm and emits orange light at 565 nm. **CoralHue[®]** mKO2 can be used to label proteins or subcellular structures, or for reporter assay. **CoralHue[®]** hmKO2 sequence is codon-optimized for higher expression in mammalian cells. This expression plasmid is designed for insertion of a target gene upstream of **CoralHue[®]** hmKO2 sequence.

SOURCE: The **CoralHue[®]** KO 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[®] hmKO2 gene: bases 79-732
CMV promoter: bases 4085-4657
SV40 polyA: bases 895-929
Kanamycin/Neomycin resistance gene: bases 1972-2763
pUC origin: bases 3351-3994
f1 origin: bases 992-1447
SV40 origin: bases 1788-1923

INTENDED USE:

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

REFERENCES:

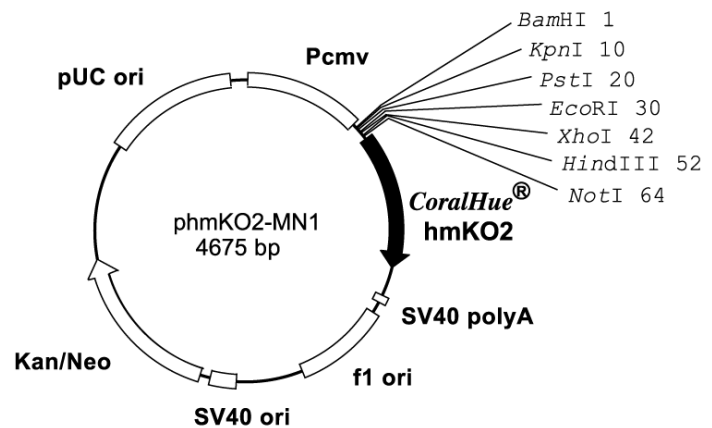
- 1) Sakaue-Sawano, S., *et al.*, *Cell* **132**, 487-498, (2008)
- 2) Karasawa, S., *et al.*, *Biochem J.* **381**, 307-312 (2004)

NOTICE:

Val is inserted to second amino acid of **CoralHue[®]** hmKO2 to form kozak sequence. (The corresponding nucleotide sequence is GTG)

RELATED PRODUCTS:

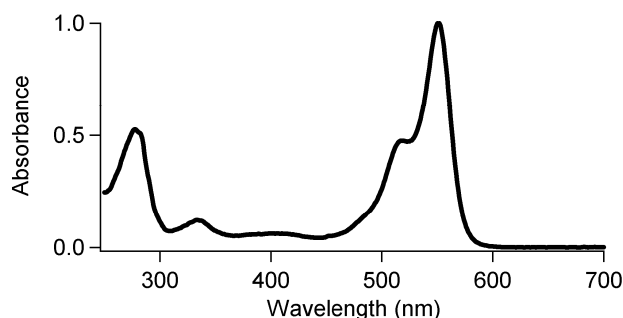
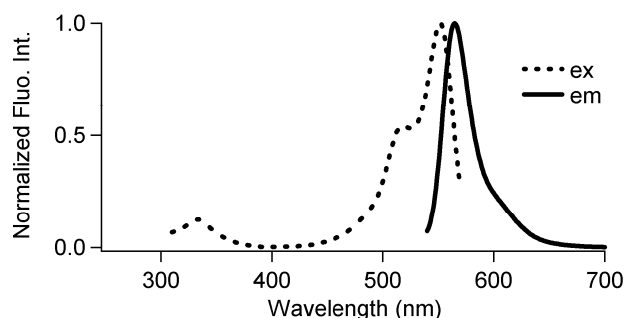
- AM-V0145M **CoralHue[®]** humanized monomeric Kusabira-Orange 2 (phmKO2-MC1)
- AM-V0140M **CoralHue[®]** humanized monomeric Kusabira-Orange 2 (phmKO2-MNL)
- AM-V0149M **CoralHue[®]** humanized monomeric Kusabira-Orange 2 (phmKO2-MCL)



1 | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI | 79 **CoralHue[®]**
| | | | | | | | | **hmKO2**
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 AGC
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[®] mKO2: 218 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M-1cm-1)	Fluorescence Quantum Yield	pH sensitivity
mKO2	551/565	63,800 (551 nm)	0.62	pK _a =5.5



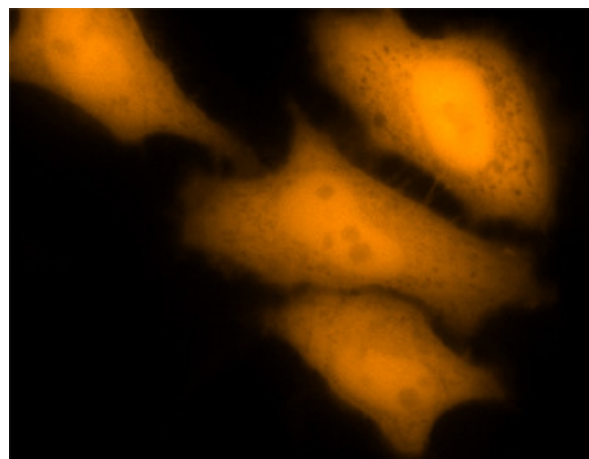
CoralHue[®] hmKO2

1) DNA sequence

ATGGTGAGCGTGATCAAGCCGAGATGAAGATGAGGTACTACAT
GGACGGCTCCGTCAATGGGCATGAGTTCACAATCGAGGGTGAGG
GCACAGGCAGACCTTACGAGGGACATCAGGAGATGACACTGCGC
GTCACAATGGCCGAGGGCGGGCCAATGCCTTTCGCTTCGACCT
GGTGTCCCACGTGTTCTGTTACGGCCACAGAGTTTTTACCAAGT
ACCCAGAAGAGATCCAGACTATTTCAAGCAGGCCTTTCCTGAG
GGCCTGTCTGGGAGAGTCCCTGGAGTTCGAGGACGGCGGCTC
CGCCTCCGTGAGCGCCACATCAGCCTGAGGGGCAACACCTTCT
ACCACAAGTCCAAGTTCACGGCGTGAACCTCCCGCGGACGGC
CCCATCATGCAGAACCAGAGCGTGGACTGGGAGCCCTCCACCGA
GAAGATCACCGCCAGCGACGGCGTGCTGAAGGGGACGTGACCA
TGTACCTGAAGCTGGAGGGGGCGGCAACCACAAGTGCCAGATG
AAGACCACCTACAAGGCCCAAGGAGATCCTGGAGATGCCCGG
CGACCACTACATCGGCCACAGGCTGGTGAGGAAGACCGAGGGCA
ACATCACCGAGCAGGTGGAGGACGCCGTGGCCCACTCC

2) Amino acid sequence

MVSVIKPEMKMRYMDGSVNGHEFTIEEGTGRPYEGHQEMTLR
VTMAEGGPMPFAFDLVSHVFCYGHRVFTKYPEEIPDYFKQAFPE
GLSWERSLEFEDGGSASVSAHISLRGNTFYHKSFTGVNFPADG
PIMQNGSVDWEPSTEKITASDGVCLKGDVTMYLKLEGGGNHCKQM
KTTYKAAKEILEMPGDHYIGHRLVRKTEGNITEQVEDAVAHS



CoralHue[®] hmKO2 expression in HeLa cells.

CoralHue[®] hmKO2 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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