

Fluorescent Protein Expression Plasmid

CoralHue[®]

Mitochondria-targeted monomeric Kusabira-Orange 1 (pMT-mKO1)

Code No.
AM-V0221M

Quantity
20 µg

BACKGROUND: This plasmid is designed for expression of Mitochondria-targeted **CoralHue[®]** Monomeric Kusabira Orange 1 (MT-mKO1) in mammalian cells. **CoralHue[®]** Kusabira Orange (KO) 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[®]** KO rapidly matures to form 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. Targeting of mKO1 to the mitochondria is achieved with the signal peptide fused to the N-terminus of mKO1.

SOURCE: The **CoralHue[®]** KO gene was originally cloned from the stony coral “Kusabira-ishi (*Fungia concinna*).”

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

PURITY: A260/A280 > 1.5

STORAGE: Store at -20°C

SEQUENCE LANDMARKS (bases):

CoralHue[®] MT-mKO1 (Including Stop Codon): 1-753
CMV promoter: bases 4109-4681
SV40 polyA: bases 919-953
Kanamycin/Neomycin resistance gene: bases 1996-2787
pUC origin: bases 3375-4018
f1 origin: bases 1016-1471
SV40 origin: bases 1812-1947

REFERENCE:

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

INTENDED USE:

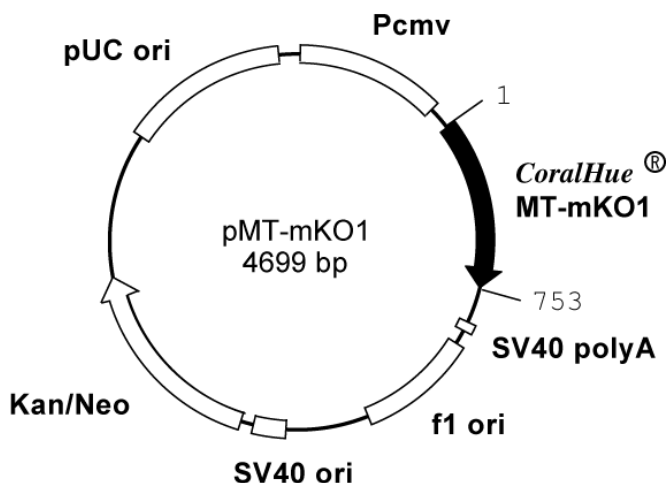
For Research Use Only. Not for use in diagnostic procedures.

GenBank:

Accession Numbers: AB128819, AB128821

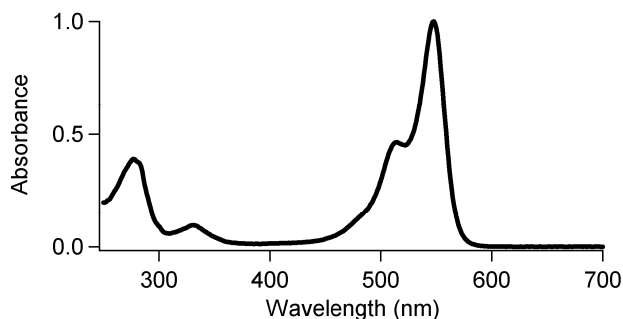
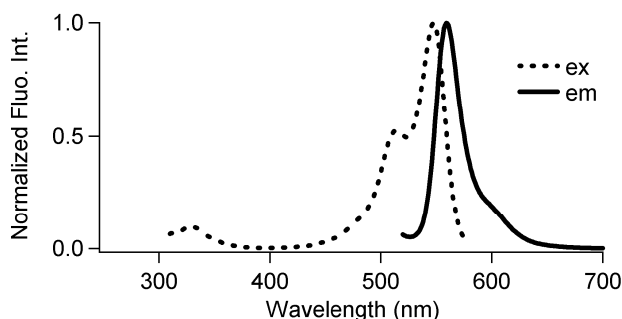
RELATED PRODUCTS:

- AM-V0221M **CoralHue[®]** Mitochondria-targeted monomeric Kusabira-Orange 1
- AM-V0222M **CoralHue[®]** ER-targeted monomeric Kusabira-Orange 1
- AM-V0223M **CoralHue[®]** Plasma Membrane-targeted mKusabira-Orange 1
- AM-V0225M **CoralHue[®]** β-Actin monomeric Kusabira-Orange 1
- AM-V0234M **CoralHue[®]** Nucleoplasm-targeted Kusabira-Orange 1



CoralHue[®] mKO1: 218 amino acids (without MT signal sequence)

	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[®] MT-mKO1

1) DNA sequence

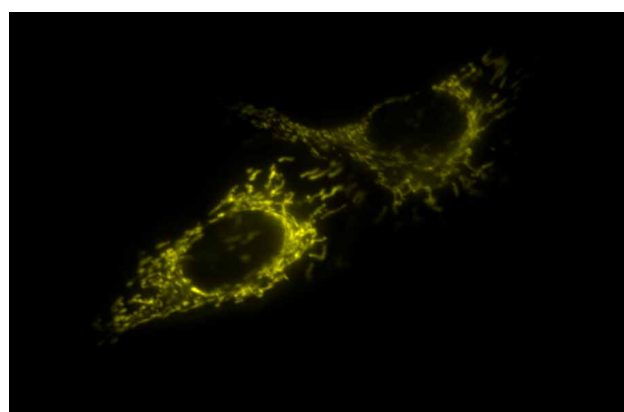
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 TCCGTCAATGGGCATGAGTTCACAATTGAAGGTGAAGGCACAGG
 CAGACCTTACGAGGGACATCAAGAGATGACACTACGGGTCACAA
 TGGCCAAGGGCGGGCCAATGCCTTTCGCGTTTGACTTAGTGCA
 CACGTGTTCTGTTACGGCCACAGACCTTTTACTAAATATCCAGA
 AGAGATACCAGACTATTTCAAACAAGCATTTCCTGAAGGCCTGT
 CATGGGAAAGGTCGTTGGAGTTCGAAGATGGTGGGTCGGCTTCA
 GTCAGTGCCATATAAGCCTTAGAGGAAACACCTTCTACCACAA
 ATCCAAATTTACTGGGGTTAACTTTCCTGCCGATGGTCTATCA
 TGCAAACCAAAGTGTGATTGGGAGCCATCAACCGAGAAAATT
 ACTGCCAGCGACGGAGTTCTGAAGGGTGATGTTACGATGTACCT
 AAACTTGAAGGAGGCGGCAATCACAAATGCCAATTCAAGACTA
 CTTACAAGGCGGCAAAAAGATTCTTAAAATGCCAGGAAGCCAT
 TACATCAGCCATCGCCTCGTCAGGAAAACCGAAGGCAACATTAC
 TGAGCTGGTAGAAGATGCAGTAGCTCATTACTCAATGTTGCCTT
 CC

(Underlined sequences in red are from cytochrome C oxidase subunit IV.)

2) Amino acid sequence

MLSLRQSI RFFK PATRTL C SSRAAAGTMVSVIKPEMKMRYMDG
 SVNGHEFT IEGEGTGRPYEGHQEMTLRVTMAGGGPMPFADFVLS
 HVFCYGHRPFTKYPEE IPDYFKQAFPEGLSWERSLEFEDGGSAS
 VSAH ISLRGNTFYHKSFTGVNFPADGPI MQNSVDWEPSTEKI
 TASDGLVKGDVTMYLKL EGGGNHKKCFKTTYKAAKILKMPGSH
 YISHRLVRKTEGNITELVEDAVAHYSMLPS

(Underlined sequences in red are from cytochrome C oxidase subunit IV.)



CoralHue[®] MT-targeted mKO1 expression in HeLa cells.

CoralHue[®] mKO 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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