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

Amalgaam MBL

Fluorescent Protein Expression Plasmid

CoralHue®

ER-targeted monomeric Kusabira-Orange 1 (pER-mKO1)

Code No.	Quantity
AM-V0222M	20 µg

BACKGROUND: This plasmid is designed for expression of endoplasmic reticulum (ER)-targeted ***CoralHue***® monomeric Kusabira Orange 1 (mKO1) in mammalian cells. ***CoralHue***® KO1, which was originally cloned from the stony coral whose Japanese name is "Kusabira-ishi". A monomeric version of ***CoralHue***® KO1 (mKO1) absorbs light maximally at 548 nm and emits orange light at 559 nm. Targeting of mKO1 to the ER is achieved with the signal peptide and ER-retention sequence (Lys-Asn-Glu-Leu) of calreticulin fused to the N- and C-terminus of mKO1, respectively.

SOURCE: The ***CoralHue***® KO1 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® ER-mKO1 (Including Stop Codon): 1-723
CMV Promoter: 4067-4639
SV40 poly A: 883-917
Kanamycin/Neomycin resistance gene: 1960-2751
pUC Origin: 3339-3982
f1 Origin: 980-1435
SV40 Origin: 1776-1911

INTENDED USE:
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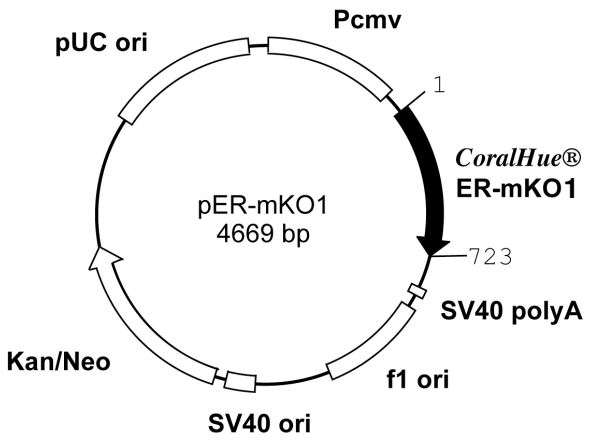
REFERENCES:
1) Karasawa, S., *et al. Biochem. J.* **381,** 307-312 (2004)
2) Miyawaki, A., *et al. Nature* **388,** 882-887 (1997)

GenBank:
Accession Numbers: AB128819, AB128821

RELATED PRODUCTS:
AM-V0221M ***CoralHue***® Mitochondria-targeted monomeric Kusabira-Orange 1 (pMT-mKO1)
AM-V0223M ***CoralHue***® Plasma Membrane-targeted monomeric Kusabira-Orange 1 (pPM-mKO1)
AM-V0234M ***CoralHue***® Nucleoplasm-targeted Kusabira-Orange 1 (pNP-KO1)
AM-V0225M ***CoralHue***® β-Actin-targeted monomeric Kusabira-Orange 1 (pActin-hmKO1)



Amalgaam
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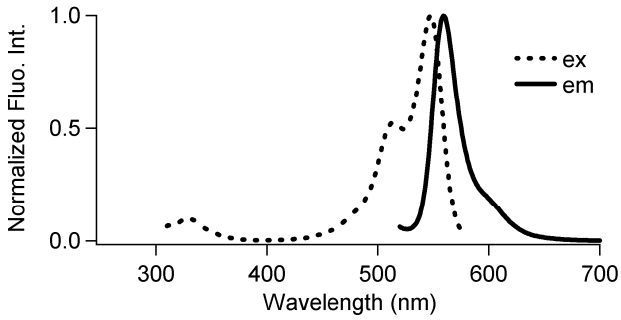
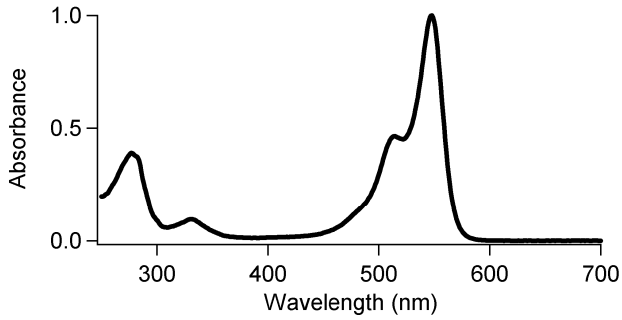
***CoralHue*® mKO1:** 218 amino acids (without ER signal sequence)

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





CoralHue® ER-mKO1

1) DNA sequence

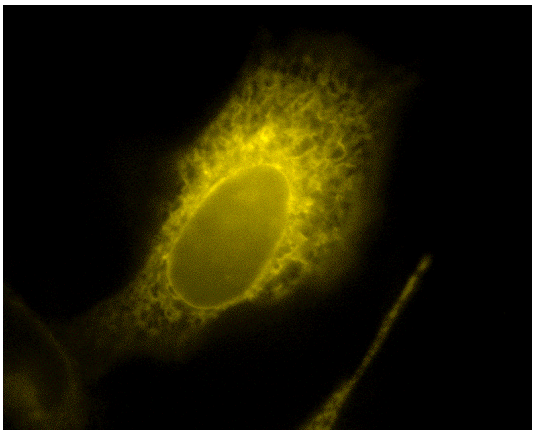
ATGCTGCTGCCCGTCCCCCTGCTGCTGGGCCTGCTGGGCGCCGCCG
CGGATCCGATGGTGAGTGTGATTAAACCAGAGATGAAGATGAGGTA
CTACATGGACGGCTCCGTCAATGGGCATGAGTTCACAATTGAAGGT
GAAGGCACAGGCAGACCTTACGAGGGACATCAAGAGATGACACTAC
GCGTCACAATGGCCAAGGGCGGGCCAATGCCTTTCGCGTTTGACTT
AGTGTCACACGTGTTCTGTTACGGCCACAGACCTTTTACTAAATAT
CCAGAAGAGATACCAGACTATTTCAAACAAGCATTTCCTGAAGGCC
TGTCATGGGAAAGGTCGTTGGAGTTCGAAGATGGTGGGTCCGCTTC
AGTCAGTGCGCATATAAGCCTTAGAGGAAACACCTTCTACCACAAA
TCCAAATTTACTGGGGTTAACTTTCCTGCCGATGGTCCTATCATGC
AAAACCAAAGTGTTGATTGGGAGCCATCAACCGAGAAAATTACTGC
CAGCGACGGAGTTCTGAAGGGTGATGTTACGATGTACCTAAAACTT
GAAGGAGGCGGCAATCACAAATGCCAATTCAAGACTACTTACAAGG
CGGCAAAAAAGATTCTTAAAATGCCAGGAAGCCATTACATCAGCCA
TCGCCTCGTCAGGAAAACCGAAGGCAACATTACTGAGCTGGTAGAA
GATGCAGTAGCTCATTCCAAGGACGAGCTG

(Underlined sequences in red are from calreticulin.)

2) Amino acid sequence

MLLPVPLLLGLLGAAADPMVSVIKPEMKMRYYMDGSVNGHEFTIEG
EGTGRPYEGHQEMTLRVTMAKGGPMPFAFDLVSHVFCYGHRPFTKY
PEEIPDYFKQAFPEGLSWERSLEFEDGGSASVSAHISLRGNTFYHK
SKFTGVNFPADGPIMQNQSVDWEPSTEKITASDGVLKGDVTMYLKL
EGGGNHKCQFKTTYKAAKKILKMPGSHYISHRLVRKTEGNITELVE
DAVAHSKDEL

(Underlined sequences in red are from calreticulin.)



***CoralHue*® ER-mKO1 expression in HeLa cells.**

***CoralHue*® ER-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).

Patent Nos. JP4709653, US8017746 and EP1700913.