

Fluorescent Protein Expression Plasmid

CoralHue[®]

ER-targeted mKO1 Expression Plasmid (pER-mKO1)

Code No.

AM-V0222

Quantity

20 µg

BACKGROUND: This plasmid is designed for expression of endoplasmic reticulum (ER)-targeted *CoralHue*[®] monomeric Kusabira Orange 1 (mKO1) in mammalian cells. *CoralHue*[®] KO, which was originally cloned from the stony coral whose Japanese name is “Kusabira-Ishi”. A monomeric version of *CoralHue*[®] KO (mKO) 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*[®] 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[®] ER-mKO1 (Including Stop Codon): 1-723

CMV Promoter: 4067-4639

SV40 Poly A: 883-917

Kan/Neo Resistance Gene: 1960-2751

pUC Origin: 3339-3982

f1 Origin: 980-1435

SV40 Origin: 1776-1911

INTENDED USE: For research use only. Not for clinical or diagnostic use.

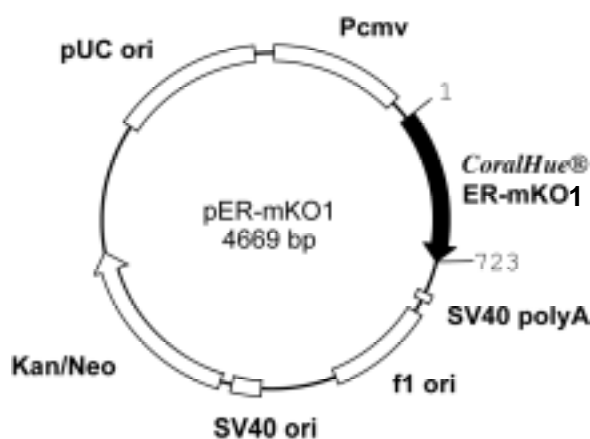
REFERENCES:

Karasawa, S., *et al. Biochem. J.* **381**, 307-312 (2003)

Miyawaki, A., *et al. Nature* **388**, 882-887 (1997)

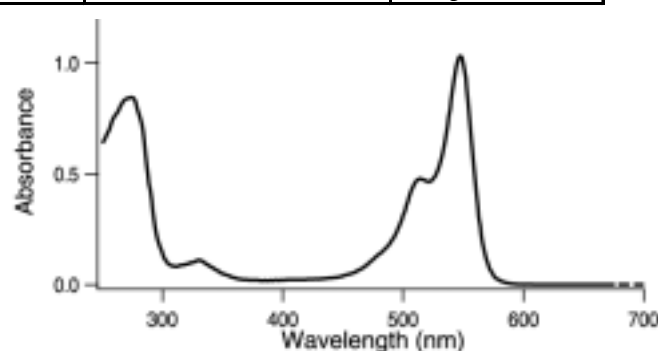
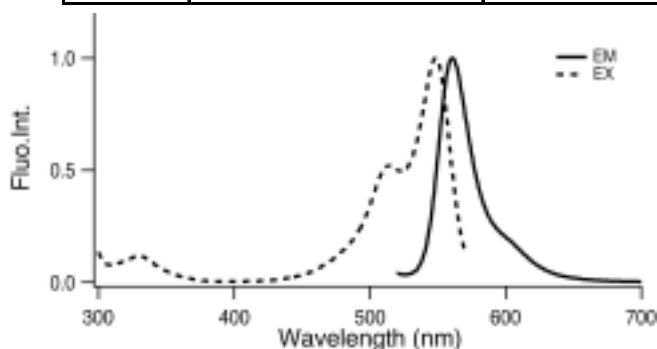
GenBank:

Accession Numbers: AB128819, AB128821



CoralHue[®] ER-mKO1: 218 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M ¹ cm ⁻¹)	Fluorescence Quantum Yield	pH sensitivity
mKO1	548/559	51,600 (548 nm)	0.6	pKa=5.0



CoralHue[®] ER-mKO1 DNA Sequence

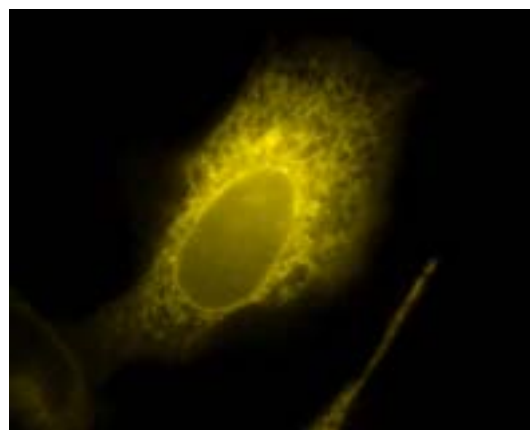
ATGCTGCTGCCCGTCCCCCTGCTGCTGGGCTGCTGGGCGCCGCCG
CGGATCCGATGGTGAGTGTGATTAAACCAGAGATGAAGATGAGGTA
 CTACATGGACGGCTCCGTC AATGGGCATGAGTTCACAATTGAAGGT
 GAAGGCACAGGCAGACCTTACGAGGGACATCAAGAGATGACACTAC
 GCGTCACAATGGCCAAGGGCGGGCCAATGCCTTTTCGCGTTTGACTT
 AGTGTACACGTGTTCTGTTACGCCACAGACCTTTTACTAAATAT
 CCAGAAGAGATACCAGACTATTTCAAACAAGCATTTCCTGAAGGCC
 TGTCATGGGAAAGTTCGTTGGAGTTCGAAGATGGTGGGTCGGCTTC
 AGTCAGTGCGCATATAAGCCTTAGAGGAAACACCTTCTACCACAAA
 TCCAAATTTACTGGGGTAACTTTCTGCCGATGGTCTATCATGC
 AAAACCAAAGTGTGATTGGGAGCCATCAACCGAGAAAATTACTGC
 CAGCGACGGAGTTCGAAGGGTATGTTACGATGTACCTAAAACCTT
 GAAGGAGGCGGCAATCACAAATGCCAATCAAGACTACTTACAAGG
 CGGCAAAAAGATTCTTAAAATGCCAGGAAGCCATTACATCAGCCA
 TCGCCTCGTCAGAAAACCGAAGGCAACATTACTGAGCTGGTAGAA
 GATGCAGTAGCTCATTCCAAGGACGAGCTGt aa

(Underlined sequences in red are from calreticulin.)

CoralHue[®] ER-mKO1 Amino Acid Sequence

MLLPVPLLLGLLGAADPMVSVIKPEMKMRYMDGSVNGHEFTIEG
 EGTGRPYEGHQEMTLRVMTAKGGPMPFAFDLVSHVFCYGHRPFTKY
 PEEIPDYFKQAFPEGLSWERSLEFEDGGSASVSAHISLRGNTFYHK
 SKFTGVNFPADGPI MQNQSVDWEPSTEKI TASDGV LKGDVTMYLKL
 EGGNHKQCFKTTYKAAKKILKMPGSHYISHRLVRKTEGNI TELVE
 DAVAHSKDEL*

(Underlined sequences in red are from calreticulin.)



CoralHue[®] ER-mKO1 expression in HeLa cells

Fluorescent protein **CoralHue[®] ER-mKO1** used in this product was co-developed with the Laboratory for Cell Function and Dynamics, the Advanced Technology Development Center, the Brain Science Institute, and the Institute of Physical and Chemical Research (RIKEN) (lab head Dr. Atsushi Miyawaki).

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