

Fluorescent Protein Expression Plasmid

CoralHue[®]

Mitochondria-targeted mKO1 Expression Plasmid (pMT-mKO1)

Code No.

AM-V0221

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

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

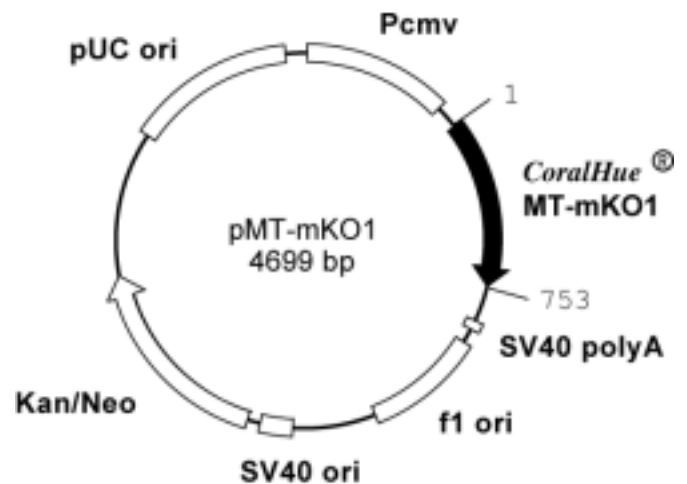
REFERENCES:

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

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

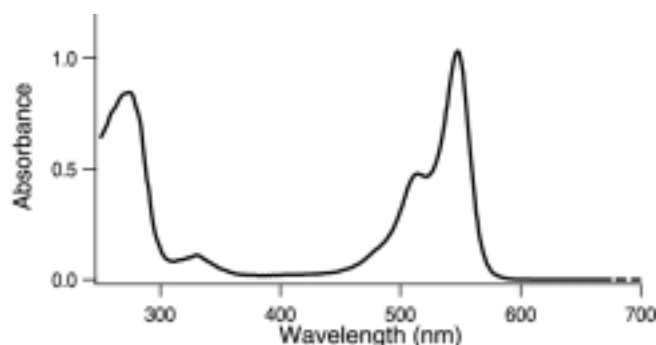
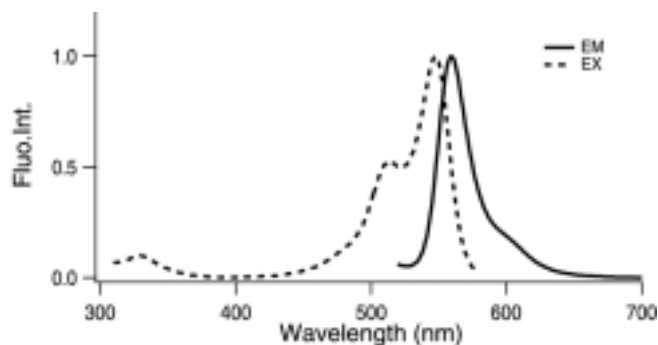
GenBank:

Accession Numbers: AB128819, AB128821



CoralHue[®] MT-mKO1: 250 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[®] MT-mKO1 DNA Sequence

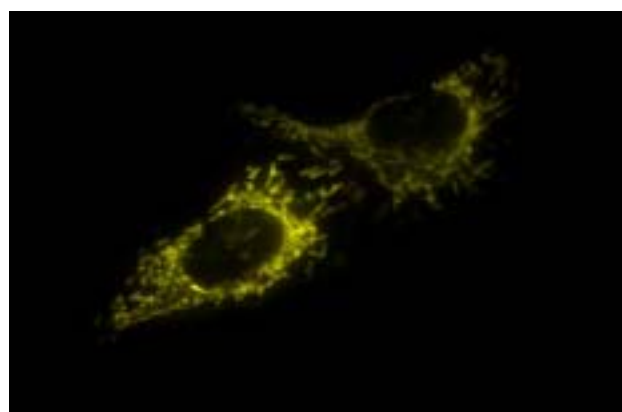
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CAGGACTCTGTGCAGTTCAGGGCGGCCGCGGGACAATGGTGA
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 TCCGTCAATGGGCATGAGTTCACAATTGAAGGTGAAGGCACAGG
 CAGACCTTACGAGGGACATCAAGAGATGACACTACGCGTCACAA
 TGGCCAAGGGCGGGCCAATGCCTTTCGCGTTTTGACTTAGTGTC
 CACGTGTTCTGTTACGGCCACAGACCTTTTACTAAATATCCAGA
 AGAGATACCAGACTATTTCAAACAAGCATTTTCTGAAGGCCTGT
 CATGGGAAAGGTCGTTGGAGTTCGAAGATGGTGGGTCCGCTTCA
 GTCAGTGCCATATAAGCCTTAGAGGAAACACCTTCTACCACAA
 ATCCAAATTTACTGGGGTAACTTTTCTGCCGATGGTCTATCA
 TGCAAACCAAAGTGTGATTGGGAGCCATCAACCGAGAAAATT
 ACTGCCAGCGACGGAGTTCTGAAGGGTGATGTTACGATGTACCT
 AAAACTTGAAGGAGGCGGCAATCACAATGCCAATTCAGACTA
 CTTACAAGGCGGCAAAAAAGATTCTTAAAATGCCAGGAAGCCAT
 TACATCAGCCATCGCCTCGTCAGGAAAACCGAAGGCAACATTAC
 TGAGCTGGTAGAAGATGCAGTAGCTCATTACTCAATGTTGCCTT
 CCTAA

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

CoralHue[®] MT-mKO1 Amino Acid Sequence

MLSLRQSIRFFKPATRTLCSSRAAAGTMVSVIKPEMKMRYMDG
 SVNGHEFTIEGEGTGRPYEGHQEMTLRVTMAGGPPMPFADLVS
 HVFCYGHRPFTKYPEEIPDYFKQAFPEGLSWERSLEFEDGGSAS
 VSAHISLRGNTFYHKSFTGVNFPADGPI MQNQSVDWEPSTEKI
 TADGVLKGDVTMYLKLEGGNHNKCFKTTYKAAKKILKMPGSH
 YISHRLVRKTEGNITELVEDAVAHYSMLPS*

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



CoralHue[®] MT-mKO1 expression in HeLa cells

Fluorescent protein **CoralHue[®] MT-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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