

## Fluorescent Protein Expression Plasmid

*CoralHue*<sup>®</sup>

### Plasma Membrane-targeted mKO1 Expression Plasmid (pPM-mKO1)

Code No.

AM-V0223

Quantity

20 µg

**BACKGROUND:** This plasmid is designed for expression of plasma membrane-targeted *CoralHue*<sup>®</sup> Monomeric Kusabira Orange 1 (PM-mKO1) in mammalian cells. *CoralHue*<sup>®</sup> 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*<sup>®</sup> KO rapidly matures to form a brightly fluorescent dimer. *CoralHue*<sup>®</sup> KO has been carefully engineered to form a monomer, *CoralHue*<sup>®</sup> Monomeric Kusabira Orange 1 (mKO1) that maintains the brilliance and pH stability of the parent protein. Targeting of mKO1 to the Plasma Membrane is achieved with the signal peptide fused to the N -terminus of mKO1.

**SOURCE:** The *CoralHue*<sup>®</sup> KO gene was cloned from 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*<sup>®</sup> PM-mKO1 (Including Stop Codon): 1-720  
CMV promoter: 4063-4635  
SV40 polyA: 873-907  
Kanamycin/Neomycin resistance gene: 1950-2741  
pUC origin: 3329-3972  
f1 origin: 970-1425  
SV40 origin: 1766-1901

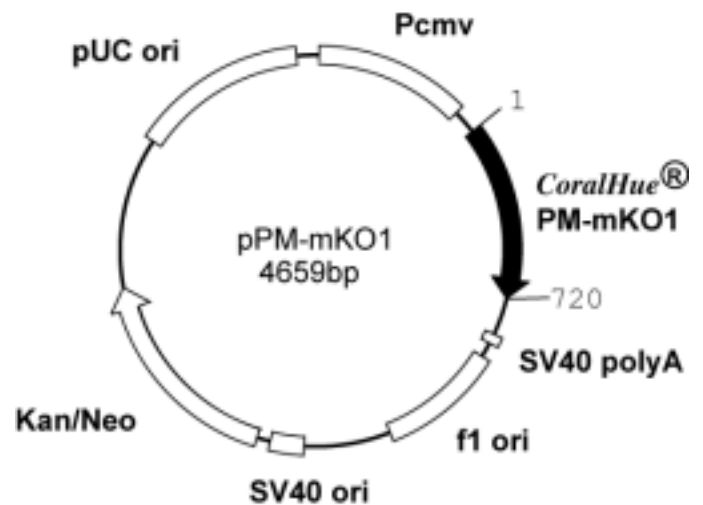
**INTENDED USE:** For research use only. Not for clinical or diagnostic use.

#### REFERENCES:

Karasawa, S., *et al. Biochem. J.* **381**, 307-312 (2003)  
Miyawaki, A., *et al. Nature* **388**, 882-887 (1997)

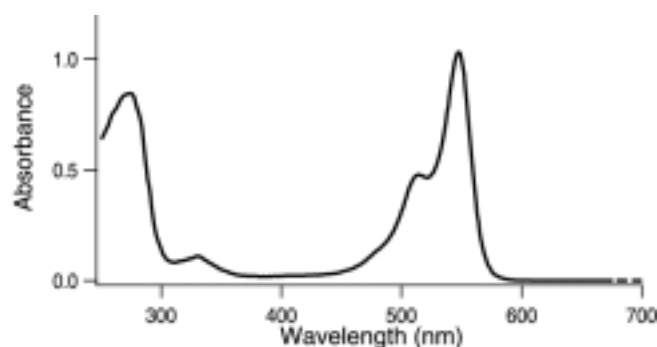
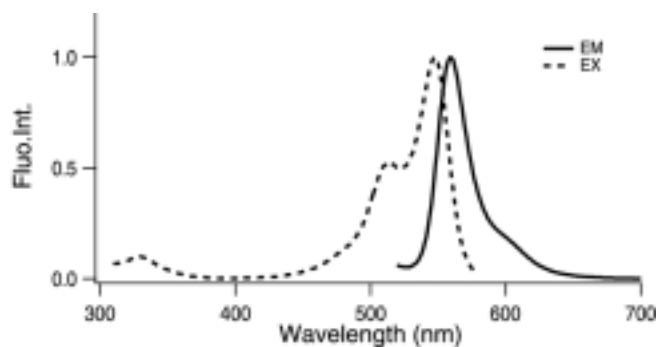
#### GenBank:

Accession Numbers: AB128819, AB128821



**CoralHue<sup>®</sup> PM-mKO1: 239 amino acids**

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



**CoralHue<sup>®</sup> PM-mKO1 DNA Sequence**

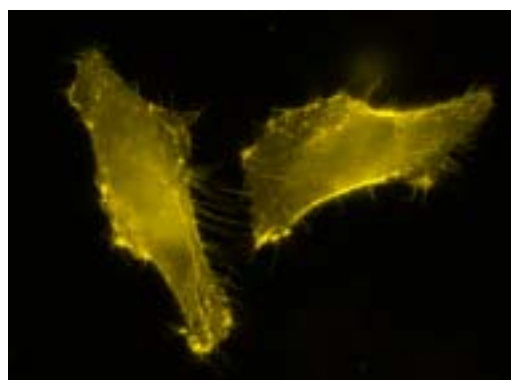
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TTCACAATTGAAGGTGAAGGCACAGGCAGACCTTACGAGGGACA  
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TGCCTTTCGCGTTTGACTTAGTGTACACGTGTTCTGTTACGGC  
CACAGACCTTTTACTAAATATCCAGAAGAGATACCAGACTATTT  
CAAACAAGCATTTCTGAAGGCTGTCATGGGAAAGGTCGTTGG  
AGTTCGAAGATGGTGGTCCGCTTCAGTCAGTGCCATATAAGC  
CTTAGAGGAAACACCTTCTACCACAAATCCAAATTTACTGGGGT  
TAACTTTCCTGCCGATGGTCCATCATGCAAACCAAAGTGTG  
ATTGGGAGCCATCAACCGAGAAAATTACTGCCAGCGACGGAGTT  
CTGAAGGTTGATGTTACGATGTACCTAAAATTGAAGGAGGCGG  
CAATCACAAATGCCAATTCAAGACTACTTACAAGGCGGCAAAAA  
AGATTCTTAAAATGCCAGGAAGCCATTACATCAGCCATCGCCTC  
GTCAGGAAAACCGAAGGCAACATTACTGAGCTGGTAGAAGATGC  
AGTAGCTCATTCTAA

(Underlined sequences in red are from Lyn.)

**CoralHue<sup>®</sup> PM-mKO1 Amino Acid Sequence**

MGC I KSKRKDNLNDDGVDMDPMVSV I KPEMKMRYM DGSVNGHE  
FT I EEGTG RPYEGHQEMTLRV TMAKGGPMPFAFDLVSHVFCYG  
HRPFTKYPEE I PDYFKQAFPEGLSWERSLEFEDGGSASVSAH I S  
LRGNTFYHKSFTGVNFPADGP I MQNQSV DWE PSTEK I TASDGV  
LKGDVTMYLKLEGGGNHKCQFKTTYKAAK I LKMPGSHY I SHRL  
VRKTEGNI TELVEDAVAHS\*

(Underlined sequences in red are from Lyn.)



**CoralHue<sup>®</sup> PM-mKO1 expression in HeLa cells**

Fluorescent protein **CoralHue<sup>®</sup> PM-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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