

Fluorescent Protein Expression Plasmid

CoralHue®

Mitochondria-targeted monomeric Midoriishi-Cyan 1

Code No.
AM- V0261M

Quantity
20 µg

BACKGROUND: This plasmid is designed for expression of Mitochondria-targeted CoralHue® monomeric Midoriishi-Cyan 1 (mMiCy1) in mammalian cells. CoralHue® mMiCy1, which was originally cloned from the stony coral “Midori-ishi”, absorbs light maximally at 470 nm and emits cyan light at 496 nm. Wild-type CoralHue® Midoriishi-Cyan 1 (MiCy1) rapidly matures to form a fluorescent dimeric complex. CoralHue® mMiCy1 is a monomeric version of MiCy1. Targeting of mMiCy1 to the mitochondria is achieved with the signal peptide fused to the N-terminus of mMiCy1.

SOURCE: The CoralHue® MiCy1 gene was cloned from stony coral (*Acropora* sp.).

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-mMiCy1 (Including Stop Codon):
bases 1-774

CMV promoter: bases 4130-4702

SV40 polyA: bases 940-974

Kanamycin/Neomycin resistance gene: bases 2017-2808

pUC origin: bases 3396-4039

f1 origin: bases 1037-1492

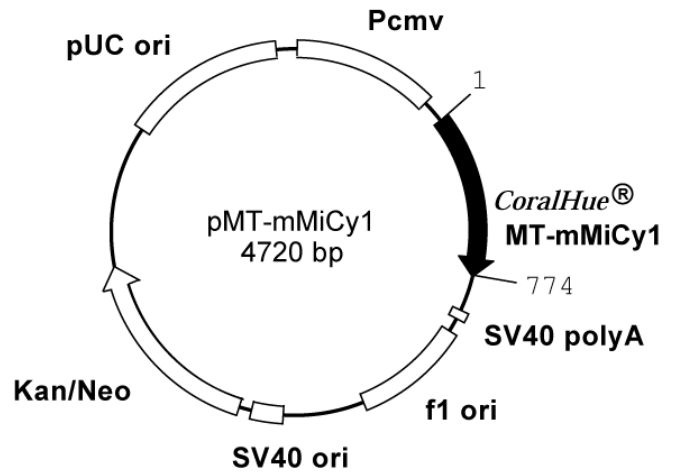
SV40 origin: bases 1833-1968

INTENDED USE:

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

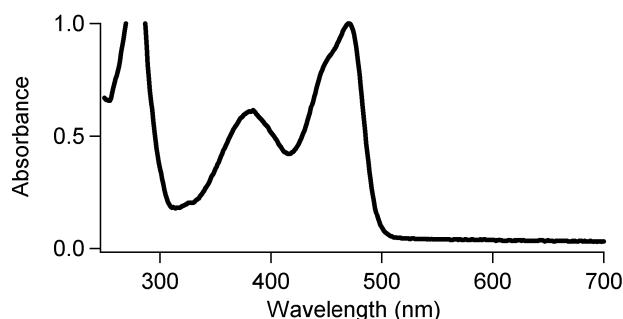
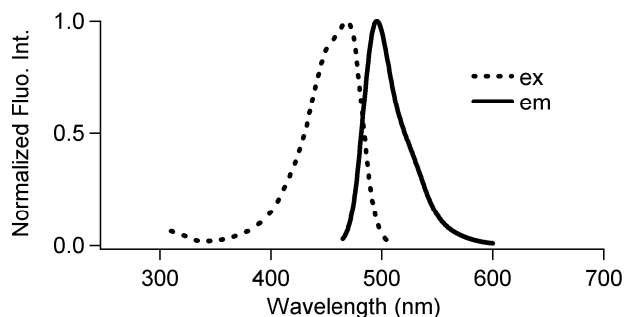
REFERENCES:

- 1) Kogure, T., *et al.*, *Nat. Biotechnol.* **24**, 577-581 (2006)
- 2) Karasawa, S., *et al.*, *Biochem. J.* **381**, 307-312 (2004)



CoralHue[®] mMiCy1: 232 amino acids (without MT signal sequence)

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M ⁻¹ cm ⁻¹)	Fluorescence Quantum Yield	pH sensitivity
mMiCy1	470/496	22,150 (470 nm)	0.70	pK _a =7.0



CoralHue[®] MT-mMiCy1

1) DNA sequence

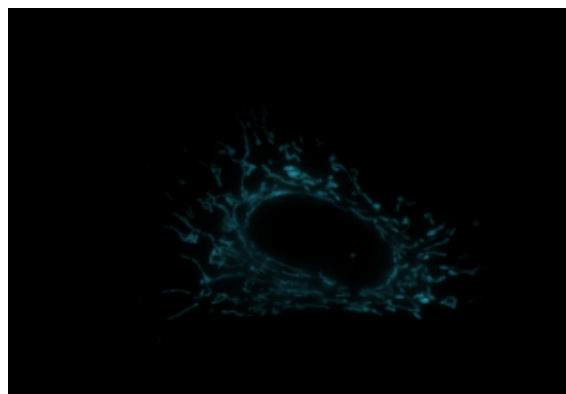
ATGCTGAGCCTGCGCCAGAGTATCCGCTTCTTCAAGCCGCCAC
CAGGACTCTGTGCAGTTCAGGGCGGCCGCGGGGACAATGGTGT
 CTTATTCAAAGCAAGGCATCGCACAAGAAATGCGGACGAAATAC
 CGTATGGAAGGCAGTGTCAATGGCCATGAGTTCACGATCGAAGG
 TGTAGGAACTGGAACCCTTACGAAGGAAACAGACGTCGAAT
 TAGTGATCATCAAGCCTAAGGAAAACCCCTTCCATTCTCCTTT
 GACATACTGTCAACAGTCTTCAATATGAAACAGATGCTTCAC
 AAAGTACCCTGCCGACATGCCTGACTATTTCAAGCAAGCATTCC
 CAGATGGAATGTCATATGAAAGGTCATTTCTATTTGAGGATGGA
 GGAGTTGCTACAGCCAGCTGGAGCATTGCTCTGGAAGGAAATTG
 CTTATCCACAATTCATCTATCATGGCACAACCTTCCCGCTG
 ATGGACCGTAATGAAGAAGCAGACAATTGGCTGGGATAAGTCC
 TCCGAAAAAATGAGTGTGGCTAAAGAGGTGCTAAGAGGTGATGT
 GACTCAGTTTCTTCTGCTCGAAGGAGGTGGTTACCAGAGATGCC
 AGTTACTCCACTTACAAAACAGAGAAGCCAGTCGCAATGCC
 CCGAGTCATGTCGTAGAACATCAAATTGTGAGGACCGACCTTGG
 CCAAAGTCAAAAAGGCTTCAAGGTCAAGCTGGAAGAACATGCTG
 AGGCTCATGTTAACCCCTTTGAAGGTTAAA

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

2) Amino acid sequence

MLSLRQSI RFFK PATRTL C SSRAAAGTMVSYSKQG IAQEMRTKY
 RMEGSVNGHEFT IEGVGTGNPYEGKQTSSELVI IKPKGKPLPFSF
 DILSTVFQYGNRCFTKYPADMPDYFKQAFPDGMSYERSFLFEDG
 GVATASWSIRLEGNCF IHNS IYHGTNFPADGPVMMKQTIGWDKS
 SEKMSVAKEVLRGDVTQFLLLEGGYQRCQLHSTYKTEKPVAMP
 PSHVVEHQIVRTDLGQTKGFKVKLEEHAEAHVNLKVK

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



CoralHue[®] MT-mMiCy1 expression in a HeLa cell.

CoralHue[®] MT-mMiCy1 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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