

## Fluorescent Protein Expression Plasmid

### *CoralHue*<sup>TM</sup> Mitochondria-targeted monomeric Keima-Red (Hyg)

Code No.  
AM-V0251HM

Quantity  
20 µg

#### VECTOR DESCRIPTION:

This vector is designed for expression of *MT-mKeima-Red* (*CoralHue*<sup>TM</sup> Mitochondria-targeted monomeric Keima-Red) gene in mammalian cells. *Keima-Red* has been cloned from *Montipora* sp., the stony coral in Kerama islands located at the southwest of Japan. A monomeric version of *CoralHue*<sup>TM</sup> Keima-Red (mKeima-Red) displays a bimodal excitation spectrum with peaks at 400 and 586 nm in neutral and acidic solutions, respectively, and an emission maximum at 620 nm. Mitochondrial targeting of mKeima-Red is achieved by introducing a mitochondrial signal sequence at the N-terminus of mKeima-Red.

#### SOURCE:

The *CoralHue*<sup>TM</sup> KeimaRed gene was originally cloned from the stony coral "Komon-Sango (*Montipora* sp.)."

#### FORMULATION:

Dry form. Reconstitute with distilled water or TE before use.

#### PURITY:

A260/A280 > 1.5

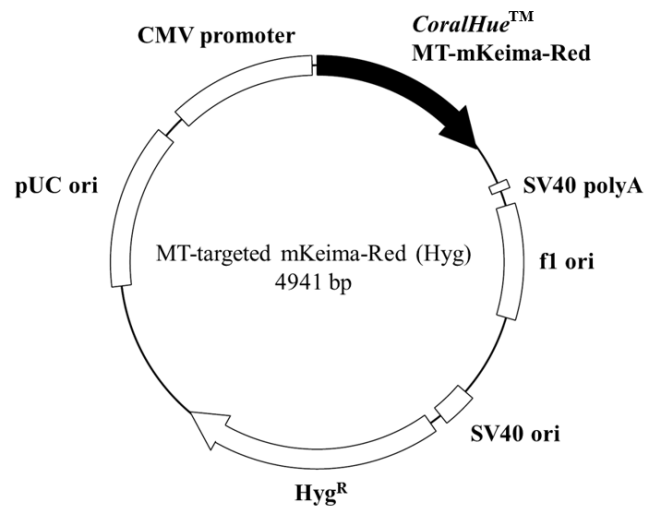
#### STORAGE:

Store at -20°C

#### SEQUENCE LANDMARKS (bases):

*CoralHue*<sup>TM</sup> MT-mKeima-Red (Including Stop Codon):  
1-750  
SV40 polyA: 910-944  
f1 origin: 1007-1462  
SV40 origin: 1803-1938  
Hygromycin B resistance gene: 1989-3026  
pUC origin: 3611-4254  
CMV promoter: 4347-4922

#### VECTOR MAP:



#### NOTE:

AM-V0251HM *CoralHue*<sup>TM</sup> Mitochondria-targeted monomeric Keima-Red (Hyg) contains the hygromycin B resistance gene. It allows selection of stable transformants of *Escherichia coli* and mammalian cells with hygromycin B. It is recommended to determine the optimal concentration of hygromycin B for the cells in use.

#### GenBank:

Accession Number: AB209969 (*mKeima-Red*)

#### REFERENCE:

Kogure, T., *et al.*, *Nat. Biotechnol.* **24**, 577-581 (2006)

#### Related Products:

Please visit our website at <https://ruo.mbl.co.jp/>.

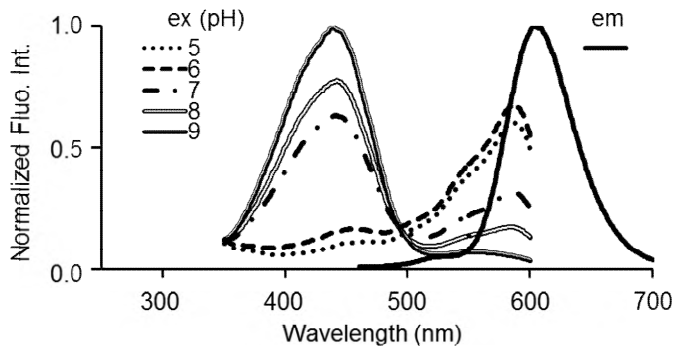
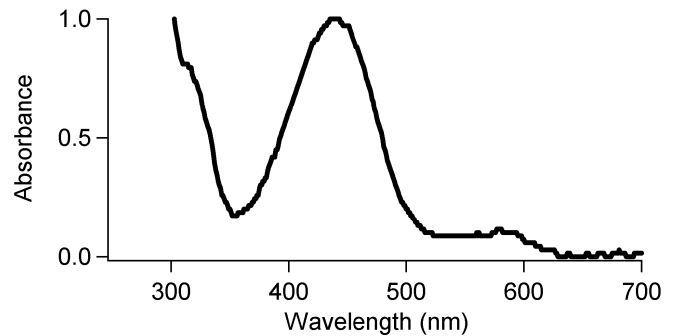
#### INTENDED USE:

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

**CoralHue™ mKeima-Red:** 222 amino acids (without MT signal sequence)

	*Excit./Emiss.Maxima (nm)	*Extinction Coefficient( $M^{-1}cm^{-1}$ )	*Fluorescence Quantum Yield	pH sensitivity
mKeima-Red	440/620	14,000 (440 nm)	0.24	$pK_a=6.5$

\*These properties were measured in pH 7.4.

**Excitation and Emission Spectrum:****Absorption Spectrum:****Recommended Filters:**

Excitation filters

440AF21 (Omega Optical) for a peak at 440 nm

550DF30 (Omega Optical) for a peak at 586 nm

Dichroic mirror

590DRLP (Omega Optical)

Emission filter

610ALP (Omega Optical)

**2) Amino acid sequence**

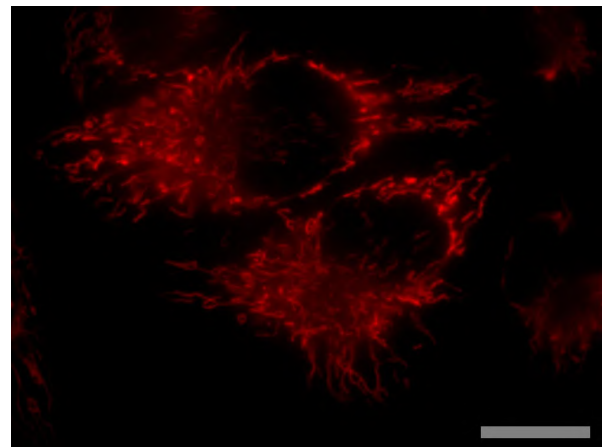
MLSLRQSIRFFKPATRTLCSSRAAAGTMVSVIAKQMTYKVYMSGTVNG  
 HYFEVEGDGKPKPYEGEQTVKLTVTKGGPLPFAWDILSPQLQYGSIPF  
 TKYPEDIPDYFKQSFPEGYTWERSMNFEDGAVCTVSNDSIQGNCFIY  
 NVKISGENFPPNGPVMQKKTQGWEPSTERLFARDGMLIGNDYMALKLE  
 GGGHYLCEFKSTYKAKKPVMPGRHEIDRKL DVTSHNRDYTSVEQCEI  
 AIARHSLLG

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

**CoralHue™ MT-mKeima-Red****1) DNA sequence**

ATGCTGAGCCTGCGCCAGAGTATCCGCTTCTTCAAGCCCGCCACCAGG  
ACTCTGTGCAGTTCAGGGCGGCGCGGGGACAATGGTGAAGTGATC  
 GCTAAACAAATGACCTACAAGGTTTATATGTCAGGCACGGTCAATGGA  
 CACTACTTTGAGGTGGAAGGCGATGGAAAAGGAAAGCCTTACGAGGGA  
 GAGCAGACAGTAAAGCTCACTGTACCAAGGGTGGACCTCTGCCATTT  
 GCTTGGGATATTTTATCACCACAGCTTCACTACGGAAGCATACCATC  
 ACCAAGTACCCTGAAGACATCCCTGATTATTTCAAGCAGTCATTCCCT  
 GAGGGATATACATGGGAGAGGAGCATGAACTTTGAAGATGGTGCAGTG  
 TGTACTGTCAGCAATGATTCCAGCATCCAAGGCAACTGTTTCATCTAC  
 AATGTCAAATCTCTGGTGAGAACTTTCTCCCAATGGACCTGTTATG  
 CAGAAGAAGACACAGGGCTGGGAACCCAGCACTGAGCGTCTCTTTCGA  
 CGAGATGGAATGCTGATAGGAAACGATTATATGGCTCTGAAGTTGGAA  
 GGAGGTGGTCACTATTTGTGTGAATTTAAATCTACTTACAAGGCAAAG  
 AAGCCTGTGAGGATGCCAGGGCCACGAGATTGACCGCAAATGGAT  
 GTAACCAGTCACAACAGGGATTACACATCTGTTGAGCAGTGTGAAATA  
 GCCATTGCACGCCACTCTTTGCTCGGT

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

**CoralHue™ MT-mKeima-Red expression in HeLa cells.**

bar: 20μm

**CoralHue™ Keima-Red** 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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