

Fluorescent Protein Expression Vector

CoralHue™

humanized dimeric Keima570 (phdKeima570-MCL)

Code No.
AM-V0129M

Quantity
20 µg

BACKGROUND: This plasmid contains the coding sequence of a dimeric version of the fluorescent protein “Keima570,” which was originally cloned from the stony coral whose Japanese name is “Komon-Sango.” **CoralHue™** dimeric Keima570 (dKeima570) absorbs light maximally at 440 nm and emits orange-red light at 570 nm. Thus **CoralHue™** dKeima570 exhibits an extremely large Stokes shift (130 nm). Because of this unique property of **CoralHue™** dKeima570, it is useful for multicolor imaging. The orange-red fluorescence is stable under usual aerobic conditions. **CoralHue™** hdKeima570 sequence is codon-optimized for higher expression in mammalian cells. This plasmid has the flexible linker between fluorescent protein and multi cloning site.

SOURCE: The **CoralHue™** dKeima570 gene was originally cloned from the stony coral (*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:

CoralHue™ hdKeima570 gene: bases 1 – 666
peptide linker: bases 667-738
CMV promoter: bases 4144-4716
SV40 polyA: bases 954-988
Kanamycin/Neomycin resistance gene: bases 2031-2822
pUC origin: bases 3410-4053
f1 origin: bases 1051-1506
SV40 origin: bases 1847-1982

INTENDED USE:

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

REFERENCE:

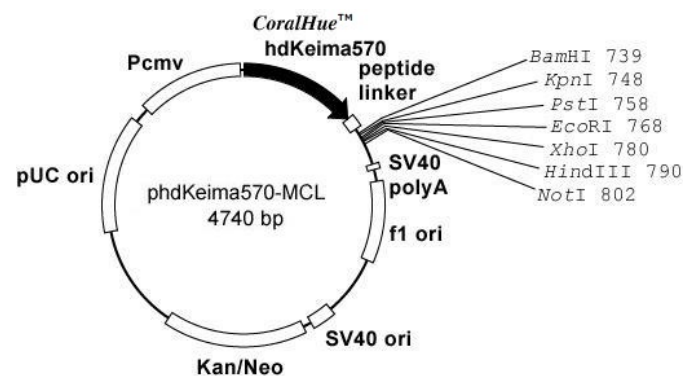
Kogure, T., *et al.*, *Nat. Biotechnol.* **24**, 577-581 (2006)

NOTICES:

- 1) Val is inserted to second amino acid of **CoralHue™** hdKeima570 to form kozak sequence. (The corresponding nucleotide sequence is GTG.)
- 2) It is highly recommended to add stop codon at 3' -terminus of a cDNA when a cDNA is inserted using *NotI* site. Some cDNA frame might not work in this construct without addition of stop codon.

RELATED PRODUCTS:

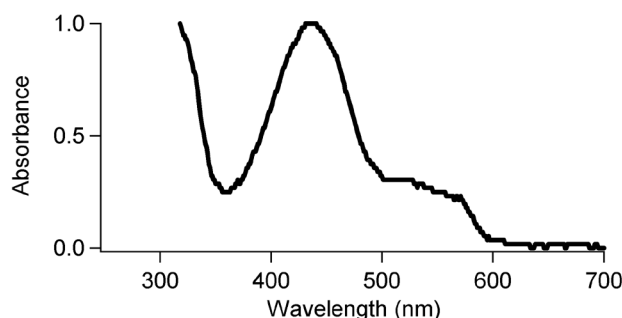
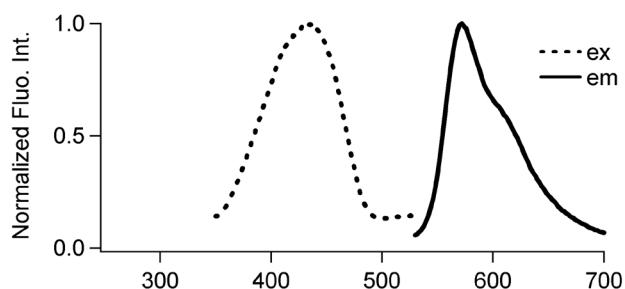
- AM-V0120M **CoralHue™** humanized dimeric Keima570 (phdKeima570-MNL)
AM-V0124M **CoralHue™** humanized dimeric Keima570 (phdKeima570-S1)
AM-V0324M **CoralHue™** Nucleoplasm-targeted humanized dKeima570 (pNP-hdKeima570)
AM-V0121M **CoralHue™** dimeric Keima570 (phdKeima570-S1)



peptide linker | BamHI | KpnI | PstI | EcoRI | XhoI | HindIII | NotI | 817
... acc caa gga gga tcc tca ggt acc gga act gca gca gag aat tcg gga aac tcg aga aca aag ctt gaa taa gcg gcc gcg act cta g
T Q G G S S G T G T A A E N S G N S R T K L E stop

CoralHue™ dKeima570: 222 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M ⁻¹ cm ⁻¹)	Fluorescence Quantum Yield	pH sensitivity
dKeima570	440/570	14,000 (440 nm)	0.15	pK _a =6.5



CoralHue™ hdKeima570/linker

1) DNA sequence

```

ATGGTGAGCGTGATCGCCAAGCAGATGACCTACAAGGTGTACAT
GTCCGGCACCGTGAACGGCCACTACTTCGAGGTGGAGGGCGACG
GCAAGGGCAAGCCCTACGAGGGCGAGCAGACCGTGAAGCTGACC
GTGACCAAGGGCGGCCCCCTGCCCTTCGCCTGGGACATCCTGTC
CCCCCTGATGTGCTACGGCAGCATCCCCTTCACCAAGTACCCCG
AGGACATCCCGACTACGTGAAGCAGAGCTTCCCCGAGGGCTAC
ACCTGGGAGAGGACCATGAACTTCGAGGACGGCGCCGTGTGCAC
CGTGAGCAACGACTCCAGCATCCAGGGCAACTGCTTCATCTACA
ACGTGAAGATCAGCGGCACCAACTTCCCCCCAACGGCCCCGTG
ATGCAGAAGAAGACCCAGGGCTGGGAGCCCAGCACCGAGAGGCT
GTTCCGCAGGGACGGAATGCTGATCGGCAACGACTACATGGCCC
TGAAGCTGGAGGGCGGCCCACTACCTGTGCGAGTTC AAGTCC
ACCTACAAGGCCAAGAAGCCCGTGAGGATGCCCGGCTACCACTA
CATCGACAGGAAGCTGGACGTGACCAGCCACAACAGGGACTACA
CCTCCGTGGAGCAGTGGAGATCGCCATCGCCAGGCACTCCCTG
CTGGGCACCGGTAATTCGCTGACGGCGGGGAGGATCGGGTGG
TAGTGGTGGTTCAGGAGGAGGATCGACCAAGGA

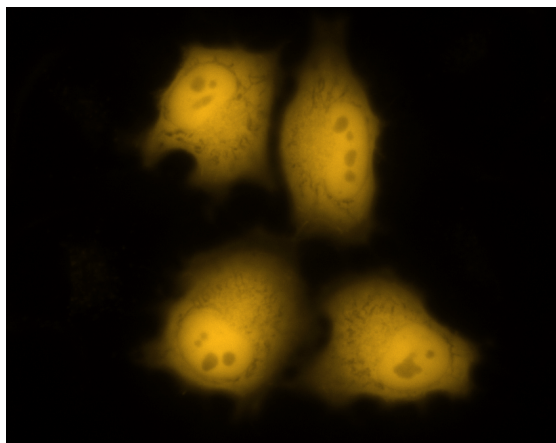
```

2) Amino acid sequence

```

MVSVIAKQMTYKVYMSGTVNGHYFEVEGDGKPKPYEGEQTVK
LTVTKGGPLPFAWDILSPLMCYGSIPFTKYPEDIPDYVKQSF
PEGYTWERTMNFEDGAVCTVSNDSIIQGNCFIYNVKISGTNF
PPNGPVMQKKTQGWEPPERL FARDGMLIGNDYMALKLEGGG
HYLGEFKSTYKAKKPVMPGYHYIDRKL DVTSHNRDYTSVEQ
CEIATARHSL LGTNSADGGGGSGGGSGGGSTQG

```



CoralHue™ hdKeima570 expression in HeLa cells.

CoralHue™ hdKeima570 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).

Use of **CoralHue™ hdKeima570** requires a license from MBL Co., Ltd. MBL grants non-profit research organizations the right to use the product for non-commercial research purposes. For commercial entities a commercial license is required. For more information, please contact support@mbl.co.jp