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

Amalgaam MBL

Fluorescent Protein Expression Vector

CoralHue®

Kaede (pKaede-MC1)

Code No.	Quantity
AM-V0012M	20 µg

BACKGROUND: ***CoralHue***® Kaede protein emits bright green fluorescence that can be irreversibly converted to red. The red fluorescence is comparable in intensity to the green and is stable under usual aerobic conditions. The green-to-red conversion is highly sensitive to irradiation with UV or violet light (350-410 nm). Maximal illumination results in a 2,000-fold increase in the ratio of red-to-green signal. The excitation lights used to elicit red and green fluorescence do not induce the photoconversion. This property provides a simple and powerful technique for regional optical marking. This expression plasmid is designed for insertion of a target gene downstream of the pKaede sequence.

SOURCE: The ***CoralHue***® Kaede gene was cloned from stony coral (*Trachyphyllia geoffroy*).

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

PURITY: A260/A280 > 1.5

STORAGE: Stored at -20°C

SEQUENCE LANDMARKS:
CoralHue® Kaede gene: bases 1-678
CMV promoter: bases 4084-4656
SV40 polyA: bases 894-928
Kanamycin/Neomycin resistance gene: bases 1971-2762
pUC origin: bases 3350-3993
f1 origin: bases 991-1446
SV40 origin: bases 1787-1922

INTENDED USE:
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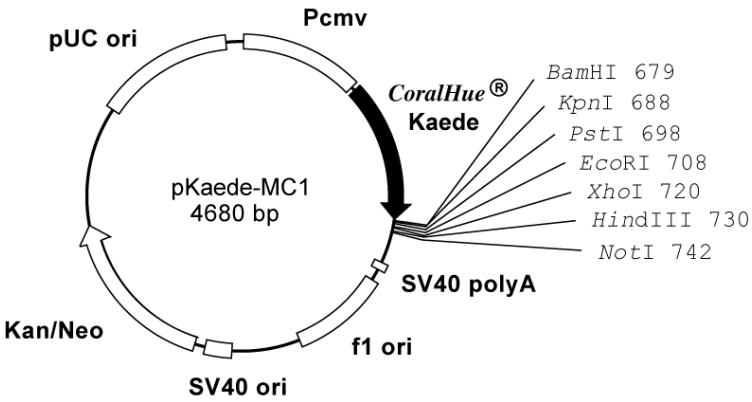
REFERENCE:
Ando, R., *et al.*, *PNAS* **99**, 12651-12656 (2002)

Gen Bank:
Accession Number: AB085641

NOTICES:
1) ***CoralHue***® Kaede forms tetramer.
2) Val is inserted to second amino acid of ***CoralHue***® Kaede to form kozak sequence. (The corresponding nucleotide sequence is GTG.)
3) The nucleotide sequence coding Thr[158] of ***CoralHue***® Kaede is changed from ACC to ACA to delete *Nco* I restriction site.
4) The nucleotide sequence coding Thr[213] of ***CoralHue***® Kaede is changed from CAT to CAC to delete *Sph* I restriction site.
5) It is highly recommended to add stop codon at 3' -terminus of a cDNA when a cDNA is inserted using *Not* I site. Some cDNA frame might not work in this construct without addition of stop codon.

RELATED PRODUCTS:
AM-V0011M ***CoralHue***® Kaede (pKaede-S1)
AM-V0013M ***CoralHue***® Kaede (pKaede-MN1)



Amalgaam
MBL MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.
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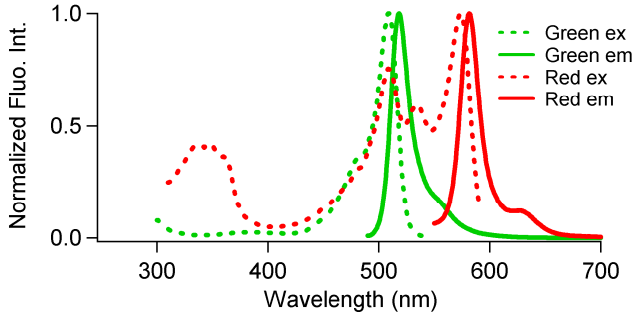
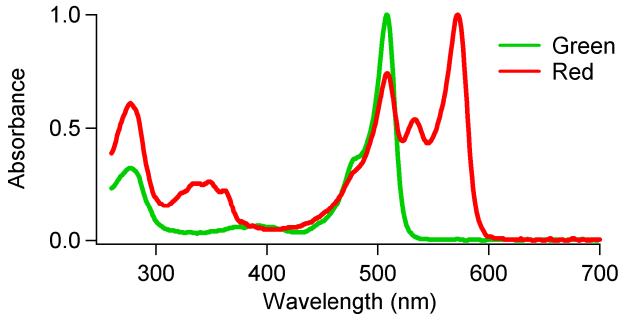
***CoralHue*® Kaede:** 226 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient ($M^{-1}cm^{-1}$)	Fluorescence Quantum Yield	pH sensitivity
Green	508/518	98,800 (508 nm)	0.88	p*K*a=5.6
Red	572/580	60,400 (572 nm)	0.33	p*K*a=5.6





CoralHue® Kaede

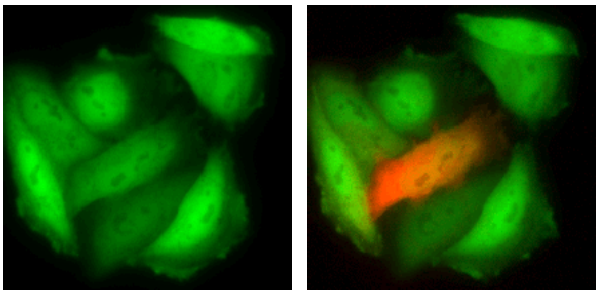
1) DNA sequence

ATGGTGAGTCTGATTAAACCAGAAATGAAGATCAAGCTGCTT
ATGGAAGGCAATGTAAACGGGCACCAGTTTGTTATTGAGGGA
GATGGAAAAGGCCATCCTTTTGAGGGAAAACAGAGTATGGAC
CTTGTAGTCAAAGAAGGCGCACCTCTCCCTTTTGCCTACGAT
ATCTTGACAACAGCATTCCATTATGGTAACAGGGTTTTTGCT
AAATACCCAGACCATATACCAGACTACTTCAAGCAGTCGTTT
CCCAAAGGGTTTTCTTGGGAGCGAAGCCTGATGTTCGAGGAC
GGGGGCGTTTGCATCGCTACAAATGACATAACACTGAAAGGA
GACACTTTTTTTAACAAAGTTCGATTTGATGGCGTAAACTTT
CCCCCAAATGGTCCTGTTATGCAGAAGAAGACTCTGAAATGG
GAGGCATCCACTGAGAAAATGTATTTGCGTGATGGAGTGTTG
ACGGGCGATATTACAATGGCTCTGCTGCTTAAAGGAGATGTC
CATTACCGATGTGACTTCAGAACTACTTACAAATCTAGGCAG
GAGGGTGTCAAGTTGCCAGGATATCACTTTGTCGATCACTGC
ATCAGCATATTGAGGCATGACAAAGACTACAACGAGGTTAAG
CTGTATGAGCACGCTGTTGCCCATTCTGGATTGCCGGACAAC
GTCAAG

2) Amino acid sequence

MVSLIKPEMKIKLLMEGNVNGHQFVIEGDGKGHPFEGKQSMD
LVVKEGAPLPFAYDILTTAFHYGNRVFAKYPDHIPDYFKQSF
PKGFSWERSLMFEDGGVCIATNDITLKGDTFFNKVRFDGVNF
PPNGPVMQKKTLKWEASTEKMYLRDGVLTGDITMALLLKGDV
HYRCDFRTTYKSRQEGVKLPGYHFVDHCISILRHDKDYNEVK
LYEHAVAHSGLPDNVK

A **B**



***CoralHue*® Kaede expression in HeLa cells.**
A; Before UV irradiation
B; After UV irradiation

***CoralHue*® Kaede** 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).

Patent No. US7345157 and US7345157