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

Amalgaam
MBL

Fluorescent Protein Expression Vector

CoralHue®
humanized monomeric Kikume Green-Red 1 (phmKikGR1-MNL)

Code No.	Quantity
AM-V0150M	20 µg

BACKGROUND: The plasmid DNA encodes a monomeric version of the fluorescent protein "***CoralHue***® Kikume Green-Red (KikGR1)". ***CoralHue***® KikGR1 was originally cloned from the stony coral whose Japanese name is "Kikume-ishi". ***CoralHue***® KikGR1 protein emits bright green fluorescence that can be irreversibly converted to red. The red fluorescence is comparable in intensity to the green fluorescence and is stable under usual aerobic conditions. This green-to-red photoconversion is highly sensitive to irradiation with UV or violet light (350-410 nm). Maximal illumination results in a robust increase in the ratio of red-to-green signal. The excitation lights used to elicit red or green fluorescence do not induce the photoconversion. This property provides a simple and powerful technique for regional optical marking. ***CoralHue***® KikGR1 rapidly matures to form a tetrameric complex. ***CoralHue***® KikGR1 has been carefully engineered to form a monomer, mKikGR1. ***CoralHue***® mKikGR1 can be used for labeling proteins or subcellular structures. ***CoralHue***® hmKikGR1 sequence is codon- optimized for higher expression in mammalian cells. This plasmid has the flexible linker between fluorescence protein and multiple cloning site.

SOURCE: The ***CoralHue***® KikGR1 gene was originally cloned from stony coral (*Favia favus*).

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

PURITY: A260/A280 > 1.5

STORAGE: Store at -20°C.

SEQUENCE LANDMARKS:
CoralHue® hmKikGR1 coding sequence: bases 145-843
peptide linker: bases 73-144
CMV promoter: bases 4196-4768
SV40 polyA: bases 1006-1040
Kanamycin/Neomycin resistance gene: bases 2083-2874
pUC origin: bases 3462-4105
f1 origin: bases 1103-1558
SV40 origin: bases 1899-2034

INTENDED USE:
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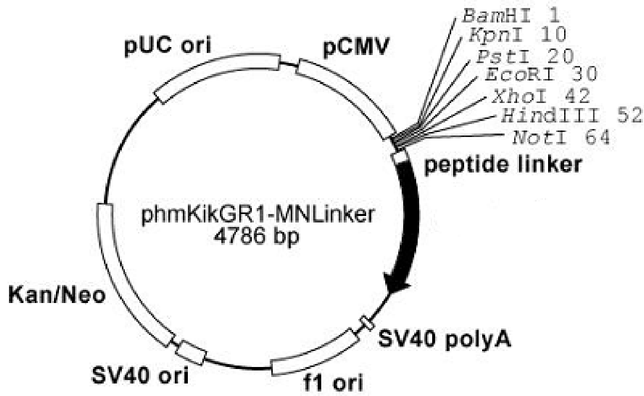
REFERENCES:
1) Habuchi, S., *et al.,PLoS One*. **3**, e3944 (2008)
2) Tsutsui, H., *et al., EMBO Rep.* **6**, 233-238 (2005)

NOTICE:
Val is inserted to second amino acid of ***CoralHue***® hmKikGR1 to form kozak sequence. (The corresponding nucleotide sequence is GTG.)

RELATED PRODUCTS:
AM-V0151M ***CoralHue***® monomeric Kikume Green-Red 1 (pmKikGR1-S1)
AM-V0159M ***CoralHue***® humanized monomeric Kikume Green-Red 1 (phmKikGR1-MCL)

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1                                                                                        73  peptide
| BamHI     KpnI      PstI      EcoRI        XhoI      HindIII       NotI                |   linker
gga tcc tca ggt acc gga act gca gca gag aat tcg gga aac tcg aga aca aag ctt gga tca gcg gcc gcc   aat tcc gct ・・・
 G   S   S   G   T   G   T   A   A   E   N   S   G   N   S   R   T   K   L   G   S   A   A   A     N   S   A
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Amalgaam
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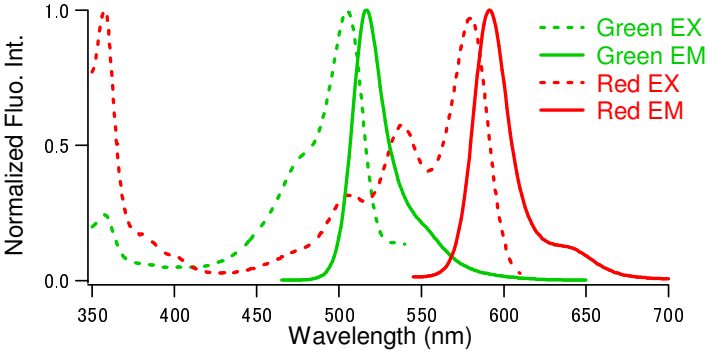
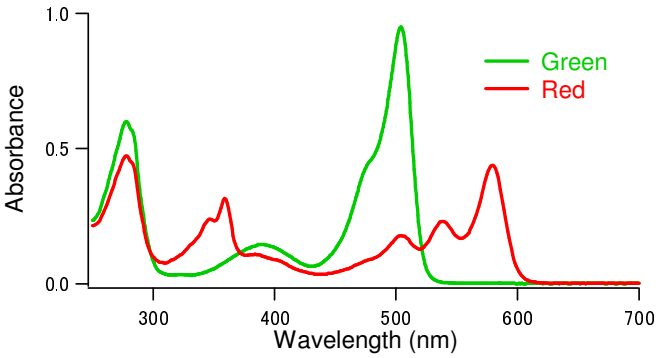
CoralHue® hmKikGR1: 233 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient ($M^{-1}cm^{-1}$)	Fluorescence Quantum Yield	pH Sensitivity
Green	505/517	47,100 (504 nm)	0.53	pKa = 6.5
Red	580/591	21,750 (579 nm)	0.64	pKa = 5.2





CoralHue® hmKikGR1/linker DNA Sequence

AATTCCGCTGACGGCGGCGGAGGATCGGGTGGTAGTGGTGGTTC
AGGAGGAGGATCGACCCAAGGAACCGGTATGGTGAGCGTGATCA
CCAGCGAGATGAAGATCGAGCTGAGGATGGAGGGCTCCGTGAAC
GGCCACAAGTTCGTGATCACCGGCAAGGGCAGCGGCCGGCCCTA
CGAGGGCACCCAGACCGTGGACCTGACCGTGATCGAGGGCGGCC
CCCTGCCCTTCGCCTTCGACATCCTGACCACCGCCTTCCACTAC
GGCAACAGGGTGTTCGTGGAGTACCCCGAGGAGATCGTGGACTA
CTTCAAGCAGAGCTTCCCCGAGGGCTACAGCTGGGAGAGGAGCA
TGAGCTACGAGGACGGCGGCATCTGCCTGGCCACCAACAACATC
ACCATGAAGAAGGACGGCAGCAACACCTTCGTGAACGAGATCAG
GTTCGACGGCACCAACTTCCCCGCCAACGGCCCCGTGATGCAGA
GGAAGACCGTGAAGTGGGAGCCCAGCACCGAGAAGATGTACGTG
AGGGACGGCGTGCTGAAGGGCGACGTGGAGATGGCCCTGCTGCT
GGAGGGCGGCGGCCACTACAGGTGCGACTTCAGGACCACCTACA
AGGCCAAGAAGGTGGTGCAGCTGCCCGACTACCACTACGTGGAC
CACCAGATGGAGATCACCAGCCACGACAAGGACTACAACAAGGT
GAAGGCCTACGAGCACGCCAAGGCCTACAGCGGCACCTACAGGG
GCGCCAAGTACGAGTTCGAGGCC

CoralHue® hmKikGR1/linker Amino Acid Sequence

NSADGGGGSGGSGGSGGGSTQGTGMVSVITSEMKIELRMEGSVN
GHKFVITGKGSGRPYEGTQTVDLTVIEGGPLPFAFDILTTAFHY
GNRVFVEYPEEIVDYFKQSFPEGYSWERSMSYEDGGICLATNNI
TMKKDGSNTFVNEIRFDGTNFPANGPVMQRKTVKWEPSTEKMYV
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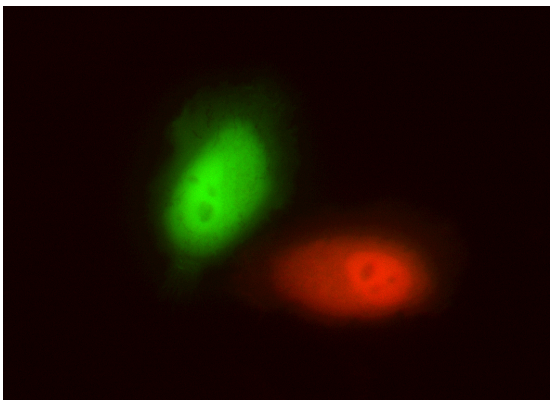

***CoralHue*® hmKikGR1 expression in HeLa cells.**
Photoconverted hmKikGR1 emits red fluorescence, while the fluorescence of untreated hmKikGR1 is green.

***CoralHue*® hmKikGR1** is a product of co-developed 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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