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

Amalgaam MBL

Fluorescent Protein Expression Vector

CoralHue®

humanaized monomeric Kikume Green-Red 1 (phmKikGR1-MCL)

Code No.	Quantity
AM-V0159M	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 gene: bases 1 – 699
peptide linker: bases 670-771
CMV promoter: bases 4177-4749
SV40 polyA: bases 987-1021
Kanamycin/Neomycin resistance gene: bases 2064-2855
pUC origin: bases 3443-4086
f1 origin: bases 1084-1539
SV40 origin: bases 1880-2005

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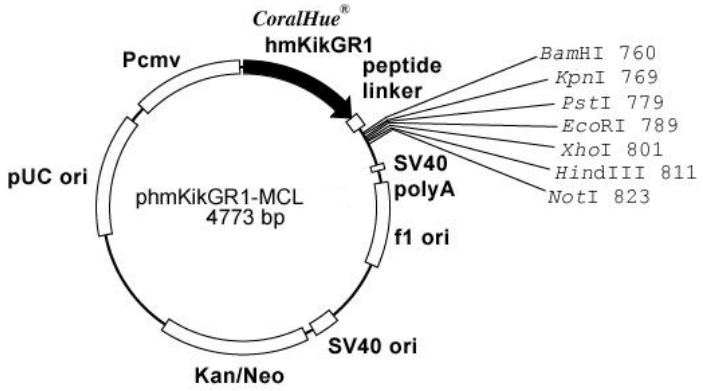
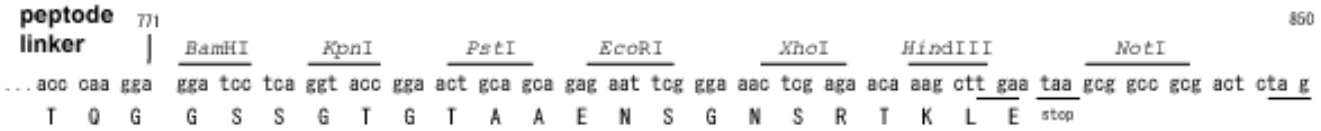
REFERENCES:
1) Habuchi, S., Tsutsui, H., *et al.,PLoS ONE.* 3, e3944 (2008)
2) Tsutsui, H., *et al., EMBO Rep.* **6**, 233-238 (2005)

NOTICES:
1) Val is inserted to second amino acid of ***CoralHue***® hmKikGR1 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 *Not*I site. Some cDNA frame might not work in this construct without addition of stop codon.

RELATED PRODUCT:
AM-V0150M ***CoralHue***® humanized monomeric Kikume Green-Red 1 (phmKikGR1-MNL)





Amalgaam
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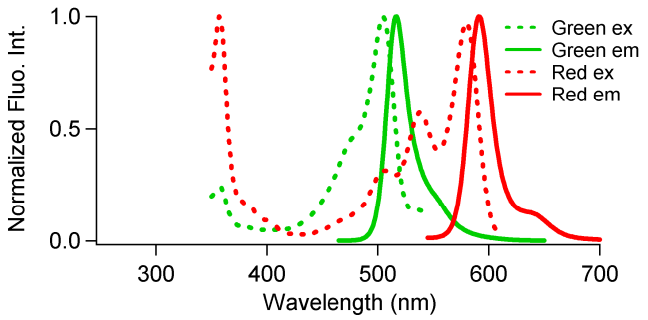
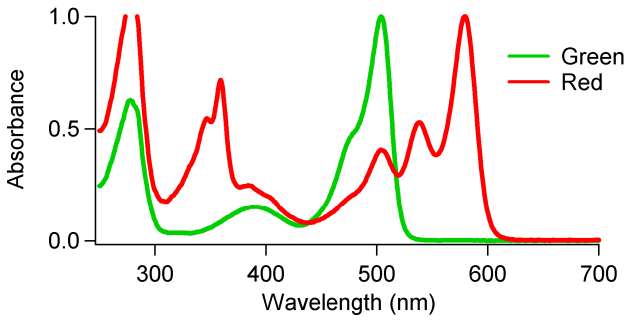
CoralHue® mKikGR1: 233 amino acids

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





CoralHue® hmKikGR1/linker

1) DNA Sequence

ATGGTGAGCGTGATCACCAGCGAGATGAAGATCGAGCTGAGGAT
GGAGGGCTCCGTGAACGGCCACAAGTTCGTGATCACCGGCAAGG
GCAGCGGCCGGCCCTACGAGGGCACCCAGACCGTGGACCTGACC
GTGATCGAGGGCGGCCCCCTGCCCTTCGCCTTCGACATCCTGAC
CACCGCCTTCCACTACGGCAACAGGGTGTTCGTGGAGTACCCCG
AGGAGATCGTGGACTACTTCAAGCAGAGCTTCCCCGAGGGCTAC
AGCTGGGAGAGGAGCATGAGCTACGAGGACGGCGGCATCTGCCT
GGCCACCAACAACATCACCATGAAGAAGGACGGCAGCAACACCT
TCGTGAACGAGATCAGGTTCGACGGCACCAACTTCCCCGCCAAC
GGCCCCGTGATGCAGAGGAAGACCGTGAAGTGGGAGCCCAGCAC
CGAGAAGATGTACGTGAGGGACGGCGTGCTGAAGGGCGACGTGG
AGATGGCCCTGCTGCTGGAGGGCGGCGGCCACTACAGGTGCGAC
TTCAGGACCACCTACAAGGCCAAGAAGGTGGTGCAGCTGCCCGA
CTACCACTACGTGGACCACCAGATGGAGATCACCAGCCACGACA
AGGACTACAACAAGGTGAAGGCCTACGAGCACGCCAAGGCCTAC
AGCGGCACCTACAGGGGCGCCAAGTACGAGTTCGAGGCCACCGG
TAATTCCGCTGACGGCGGCGGAGGATCGGGTGGTAGTGGTGGTT
CAGGAGGAGGATCGACCCAAGGA

2) Amino Acid Sequence

MVSVITSEMKIELRMEGSVNGHKFVITGKGSGRPYEGTQTVDLT
VIEGGPLPFAFDILTTAFHYGNRVFVEYPEEIVDYFKQSFPEGY
SWERSMSYEDGGICLATNNITMKKDGSNTFVNEIRFDGTNFPAN
GPVMQRKTVKWEPSTEKMYVRDGVLKGDVEMALLLEGGGHYRCD
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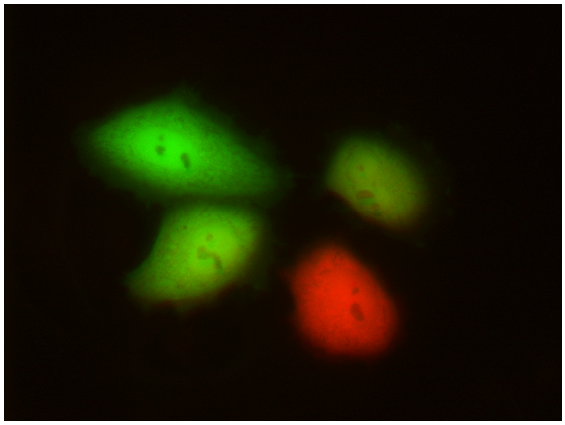

***CoralHue*® hmKikGR1 expression in HeLa cells.**
Photoconverted hmKikGR1 emits red fluorescence, while the fluorescence of untreated hmKikGR1 is green.