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

Amalgaam MBL

Fluorescent Protein Expression Vector

CoralHue®

humanized Kikume Green-Red 1 (phKikGR1-MCL)

Code No.	Quantity
AM-V0089M	20 μg

BACKGROUND: ***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. The 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® hKikGR1 gene: bases 1-684
peptide linker: bases 685-756
CMV promoter: bases 4162-4734
SV40 polyA: bases 972-1006
Kanamycin/Neomycin resistance gene: bases 2049-2840
pUC origin: bases 3428-4071
f1 origin: bases 1069-1524
SV40 origin: bases 1865-2000

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

INTENDED USE:
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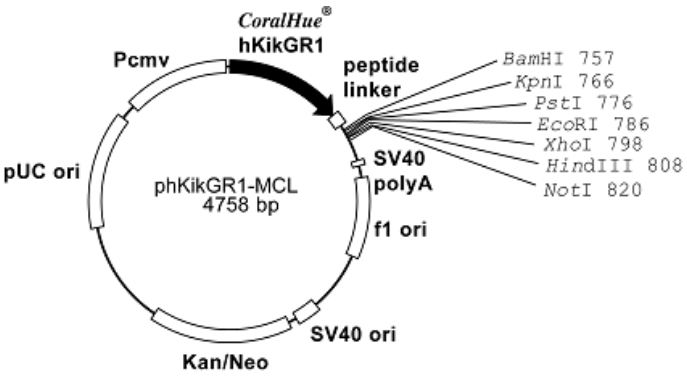
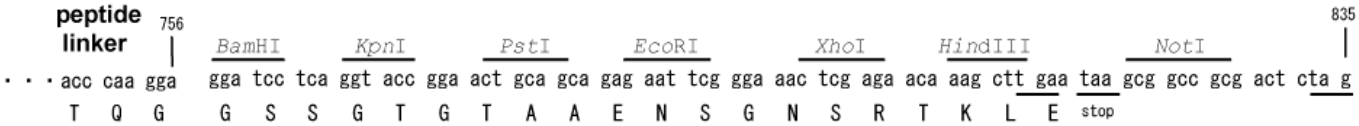
GenBank:
Accession Number: AB193293

NOTICES:
1) ***CoralHue®*** hKikGR1 forms tetramers.
2) The sequence around the initiation methionine (Met) codon has been modified to the Kozak consensus sequence. As a result, there is an insertion of a Val codon (GTG) at the second amino acid location of ***CoralHue®*** hKikGR1.
3) It is highly recommended to add a stop codon at the 3'-terminus of the cDNA when the *Not* I site is to be used for the cDNA insertion, as only one of the three different frames of stop codons is located immediately downstream of the *Not* I site.

RELATED PRODUCTS:
AM-V0080M ***CoralHue®*** humanized Kikume Green-Red 1 (phKikGR1-MNL)
AM-V0084M ***CoralHue®*** humanized Kikume Green-Red 1 (phKikGR1-S1)
AM-V0085M ***CoralHue®*** humanized Kikume Green-Red 1 (phKikGR1-MC1)
AM-V0086M ***CoralHue®*** humanized Kikume Green-Red 1 (phKikGR1-MN1)





Amalgaam MBL MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.
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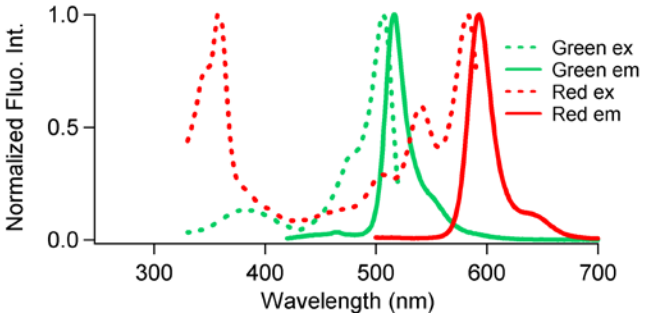
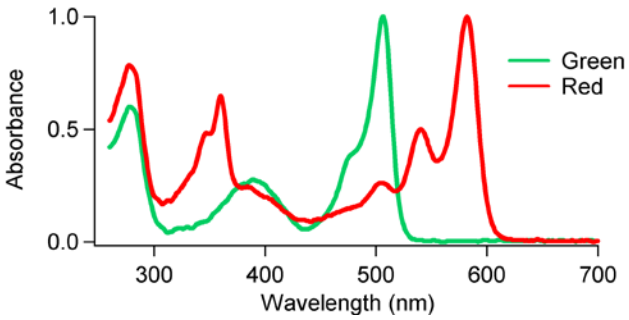
CoralHue® KikGR1: 228 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient ($M^{-1}cm^{-1}$)	Fluorescence Quantum Yield	pH Sensitivity
Green	507/517	53,700 (507 nm)	0.70	p*K*a = 7.8
Red	583/593	35,100 (583 nm)	0.65	p*K*a = 5.5





CoralHue® hKikGR1/linker

1) DNA Sequence

ATGGTGAGCGTGATCACCAGCGAGATGAAGATCGAGCTGAGGAT
GGAGGGCGCCGTGAACGGCCACAAGTTCGTGATCACCGGCAAGG
GCAGCGGCCAGCCCTTCGAGGGCATCCAGAACGTGGACCTGACC
GTGATCGAGGGCGGCCCCCTGCCCTTCGCCTTCGACATCCTGAC
CACCGCCTTCCACTACGGCAACAGGGTGTTCGTGGAGTACCCCG
AGGAGATCGTGGACTACTTCAAGCAGAGCTTCCCCGAGGGCTAC
AGCTGGGAGAGGAGCATGAGCTACGAGGACGGCGGCATCTGCCT
GGCCACCAACAACATCACCATGAAGAAGGACGGCAGCAACTGCT
TCGTGAACGAGATCAGGTTCGACGGCGTGAACTTCCCCGCCAAC
GGCCCCGTGATGCAGAGGAAGACCGTGAAGTGGGAGCCCAGCAC
CGAGAAGATGTACGTGAGGGACGGCGTGCTGAAGGGCGACGTGA
ACATGGCCCTGCTGCTCCAGGGCGGCGGCCACTACAGGTGCGAC
TTCAGGACCACCTACAAGGCCAAGAAGGTGGTGCAGCTGCCCGA
CTACCACTTCGTGGACCACCAGATGGAGATCACCAGCCACGACA
AGGACTACAACAAGGTGAAGCTGTACGAGCACGCCAAGGCCCAC
AGCGGCCTGCCCAGGCTGGCCAAGACCGGTAATTCCGCTGACGG
CGGCGGAGGATCGGGTGGTAGTGGTGGTTCAGGAGGAGGATCGA
CCCAAGGA

2) Amino acid sequence

MVSVITSEMKIELRMEGAVNGHKFVITGKGSGQPFEGIQNVDLTVI
EGGPLPFAFDILTTAFHYGNRVFVEYPEEIVDYFKQSFPEGYSWER
SMSYEDGGICLATNNITMKKDGSNCFVNEIRFDGVNFPANGPVMQR
KTVKWEPSTEKMYVRDGVLKGDVNMALLLQGGGHYRCDFRTTYKAK
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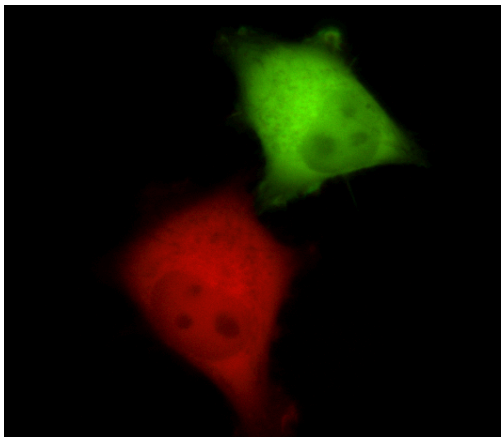
NSADGGGGSGGSGGSGGGSTQG



***CoralHue*® hKikGR1 expression in HeLa cells.**
The fluorescence of hKikGR1 irradiated with UV is red. Untreated hKikGR1 emits green fluorescence.

***CoralHue*® KikGR1** is the product licensed to MBL Co., Ltd., for patent application JP4648834, US7960530, and US8378077 owned by the Institute of Physical and Chemical Research (RIKEN)