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

Amalgaam MBL

Fluorescent Protein Cloning Vector

CoralHue®

Dronpa-Green 3 (pDG3-S1)

Code No.	Quantity
AM-V0131M	20 µg

BACKGROUND: ***CoralHue***® Dronpa-Green 1 (DG1) is a monomeric green fluorescent protein that is photochromic: its fluorescence can be reversibly turned "on" or "off" on demand by exposure to different wavelengths of light. ***CoralHue***® Dronpa-Green 3 (DG3) is the mutant of DG1 which can be turned off by blue light more efficiently. Thus, excitation with an argon laser line (488 nm) makes DG3 quickly become dark such that no substantial fluorescence signals can be observed. Excitation with a violet laser also produces no fluorescence signals. Simultaneous 488- and 405-nm irradiation, results in a rapid oscillation between the two states, thereby keeping the emissive state population large enough to produce sufficiently bright fluorescence signals.

SOURCE: The ***CoralHue***® Dronpa-Green 3 gene was originally cloned from stony coral (*Echinophyllia* sp.).

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

PURITY: A260/A280 > 1.5

STORAGE: Stored at -20°C.

SEQUENCE LANDMARKS:
CoralHue®DG3 gene (including stop codon): bases 2264-2941
Ampicillin resistance gene: bases 200-1059
*Col*E1 origin: bases 1062-2002

INTENDED USE:
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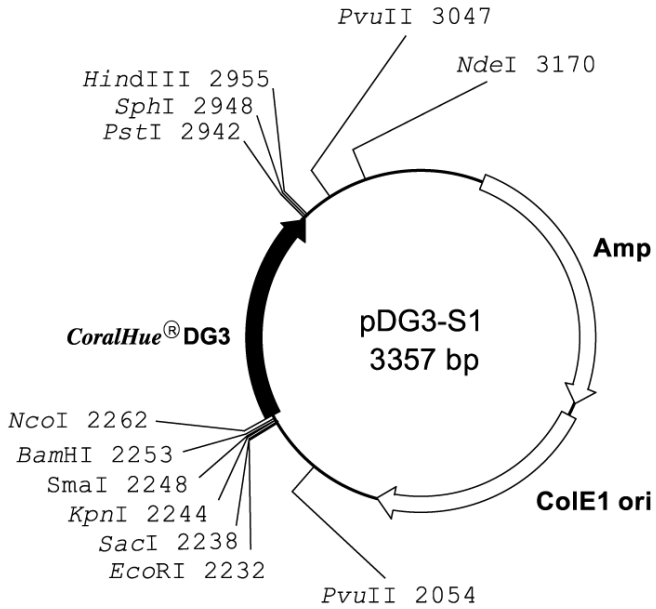
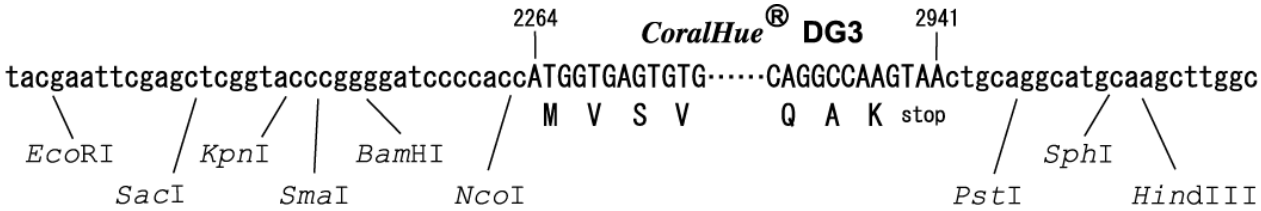
REFERENCES:
1) Fron, E, *et al., J. Am. Chem. Soc.* **129**, 4870-4871 (2007)
2) Ando, R., *et al.,Biophys. J.* **92**, L97-99 (2007)
3) Dedecker, P., *et al., Biophys. J.* **91**, L45-47 (2006)
4) Habuchi, S, *et al., Photochem. Photobiol. Sci.* **5**, 567-576 (2006)
5) Ando, R., *et al., Science* **306,** 1370-1373 (2004)

NOTICES:
1) pDG3-S1 is not expression vector. When ***CoralHue***® DG3 is expressed in any cells, the cDNA must be transferred to appropriate expression vectors by your own.
2) Val is inserted to second amino acid of ***CoralHue***® DG3 to form kozak sequence. (The corresponding nucleotide sequence is GTG.)

RELATED PRODUCTS:
AM-V0071M ***CoralHue***® Dronpa-Green 1 (pDG1-S1)
AM-V0072M ***CoralHue***® Dronpa-Green 1 (pDG1-MC1)
AM-V0073M ***CoralHue***® Dronpa-Green 1 (pDG1-MN1)





Amalgaam
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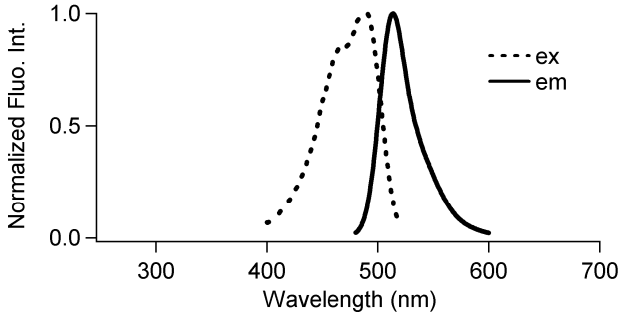
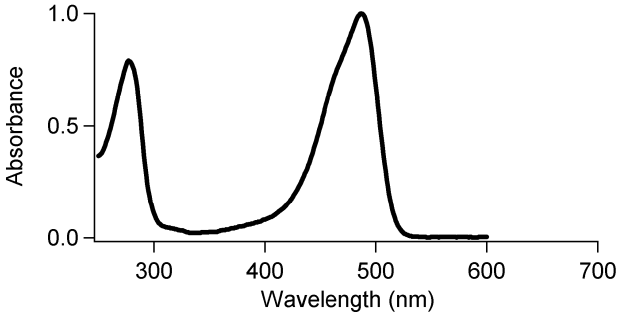
***CoralHue*® DG3 :** 225 amino acids

	Excit./Emiss.Maxima (nm)	Extinction Coefficient(M-1cm-1)	Fluorescence Quantum Yield	pH sensitivity
DG3	491/514	58,000 (487 nm)	0.28	p*K* a=5.0





CoralHue® DG3

1) DNA sequence

ATGGTGAGTGTGATTAAACCAGACATGAAGATCAAGCTGCGTAT
GGAAGGCGCTGTAAATGGACACCCGTTCGCGATTGAAGGAGTTG
GCCTTGGGAAGCCTTTCGAGGGAAAACAGAGTATGGACCTTAAA
GTCAAAGAAGGCGGACCTCTGCCTTTCGCCTATGACATCTTGAC
AACTGTGTTCTGTTACGGCAACAGGGTATTCGCCAAATACCCAG
AAAATATAGTAGACTATTTCAAGCAGTCGTTTCCTGAGGGCTAC
TCTTGGGAACGAAGCATGAATTACGAAGACGGGGGCATTTGTAA
CGCGACAAACGACATAACCCTGGATGGTGACTGTTATATCTATG
AAATTCGATTTGATGGTGTGAACTTTCCTGCCAATGGTCCAGTT
ATGCAGAAGAGGACTGTGAAATGGGAGCCATCCACTGAGAAATT
GTATGTGCGTGATGGAGTGCTGAAGGGTGATATTAACGCCGCTC
TGTCGCTTGAAGGAGGTGGCCATTACCGATGTGACTTCAAAACT
ACTTATAAAGCTAAGAAGGTTGTCCAGTTGCCAGACTATCACTT
TGTGGACCACCACATTGAGATTAAAAGCCACGACAAAGATTACA
GTAATGTTAATCTGCATGAGCACGCCGAAGCGCATTCTGAGCTG
CCGAGGCAGGCCAAG

2) Amino acid sequence

MVSVIKPDMKIKLRMEGAVNGHPFAIEGVGLGKPFEGKQSMDLK
VKEGGPLPFAYDILTTVFCYGNRVFAKYPENIVDYFKQSFPEGY
SWERSMNYEDGGICNATNDITLDGDCYIYEIRFDGVNFPANGPV
MQKRTVKWEPSTEKLYVRDGVLKGDINAALSLEGGGHYRCDFKT
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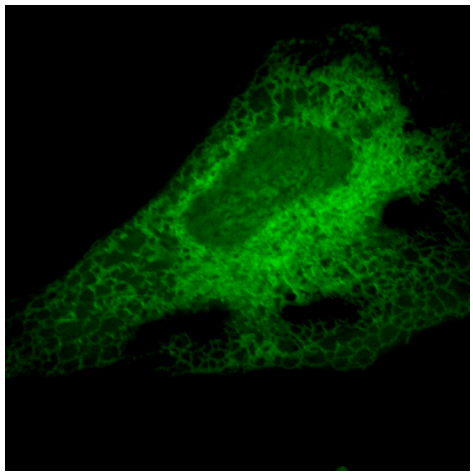
PRQAK



Fluorescent image with 405 nm + 488 nm laser of HeLa cell expressing endoplasmic reticulum (ER) targeted DG3.

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