

## All<sup>ele</sup>ustrious pmWasabi-Cx43

(Gap Junction)

Catalog Number: ABP-FP-WCX4310

Size: 10ug Price: \$349.00

### Introduction

All<sup>ele</sup>ustrious pmWasabi-Cx43 is a mammalian expression vector that encodes a fusion of rat alpha-1 connexin-43 (protein Cx43, gene Gja1) N-terminal to mWASABI. It can be a great tool for your research on gap junctions.

All<sup>ele</sup>ustrious mWasabi is a monomeric green fluorescent protein that can be easily detected using standard GFP filter sets. mWasabi may be used as a direct replacement for EGFP or other GFPs for superior performance, and may be co-imaged with blue and red fluorescent labels without substantial bleed-through.

Connexins are gap junction proteins that assemble to form 6-member hemichannels in vertebrates. These structures can move around freely within the lipid bilayer and with help from specific proteins, mainly cadherins, the hemichannels are able to dock with hemichannels of adjacent cells, forming gap junctions. Connexin protein family members are diverse, Cx43 refers to the protein with 43 kD molecular weight. It is a gap junction component involved in cell-cell communications.

### Source

Engineered variant of mTFP1, originally derived from *Clavularia sp.* coral.

### Recommended Use

mWasabi has been optimized for use with standard GFP/FITC filter sets.

### Features

- About 2-fold brighter than EGFP
- Similar photostability to EGFP
- Uses standard filter sets
- Can be co-imaged with blue and red FPs or dyes
- Mammalian expression vector ready to transfect your favorite cells
- Low sensitivity to acidic pH (fluorescence pKa=4.3)
- True monomer that will not aggregate or cause nonspecific interactions

### Reconstitution

10 µg provided in lyophilized powder form. Reconstitute with 10 µL of nuclease-free water for a final concentration of 1 µg/µL.

### Storage

Store at -20°C or at -80°C for long-term preservation.

### Human CMV Immediate-Early

Promoter (CMV Promoter).....1-589

Cx43.....824-1969

Linker.....1970-1990

mWasabi.....1991-2701

SV40 PolyA Signal.....2853-2903

bla Promoter.....3442-3546

Ampicillin Resistance Gene.....3531-4391

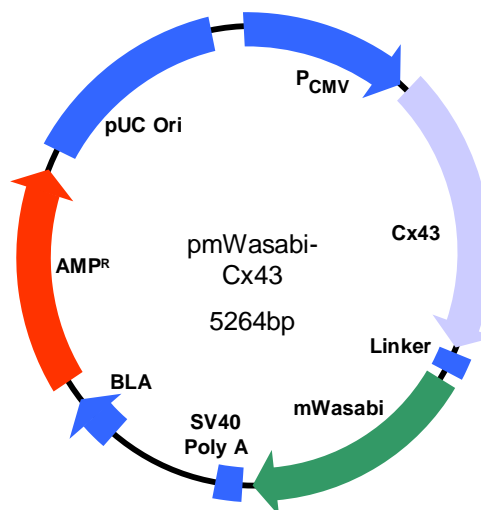
pUC Origin.....4540-5182

Upstream Sequencing Primer:

Universal CMV Promoter Primer

Downstream Sequencing Primer:

SV40 Primer:GCTTT ATTTG TGAAA TTTGT GATGC TATTG C



**References:** Ai H, Olenych SG, Wong P, Davidson MW, Campbell RE. Hue-shifted monomeric variants *Clavularia* cyan fluorescent protein: identification of the molecular determinants of color and applications in fluorescence imaging. *BMC Biology*. 2008 Mar; 6:13. Shaner NC, Patterson GH, Davidson MW. Advances in fluorescent protein technology. *J Cell Sci*. 2007 Dec 15;120(Pt 24):4247-60. Ai HW, Hazelwood KL, Davidson MW, Campbell RE. Fluorescent protein FRET pairs for ratiometric imaging of dual biosensors. *Nature Methods*. 2008 5(5): 401-03. Ai HW, Henderson JN, Remington SJ, Campbell RE. Directed evolution of a monomeric, bright, and photostable version of *Clavularia* cyan fluorescent protein: structural characterization and applications in fluorescence imaging. *Biochem J*. 2006. Shaner NC, Steinbach PA, Tsien RY. A guide to choosing fluorescent proteins. *Nat Methods*. 2005 2(12):905-09. Saffitz JE, Laing JG, Yamada KA. "Connexin expression and turnover : implications for cardiac excitability." *Circ. Res*. 2000 86 (7): 723-8. Aronica E, Gorter J, Jansen G et al. "Expression of connexin 43 and connexin 32 gap-junction proteins in epilepsy-associated brain tumors and in the perilesional epileptic cortex". *Acta Neuropathol*. 2001 101 (5): 449-59.

SEQUENCE

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Acc16I	1	4095	tgc/gca	BstZI	1	2703	c/ggccc
AccB1I	5	465 813 2123 3134 4365	g/gyrcc	CciNI	1	2703	gc/ggccc
AccB7I	1	2430	ccannnn/ntgg	Cfr10I	5	783 1978 2426 3070 4233	r/ccggy
AccBSI	2	3034 3479	gagcgg	CfrI	4	2074 2515 2703 3925	y/ggccc
AccI	2	1374 1410	gt/mkac	Csp45I	1	627	tt/cgaa
AcsI	4	629 2873 3358 3369	r/aatty	DraI	6	697 704 2761 3740 4432 4451	ttt/aaa
AcyI	7	122 175 258 444 2436 2484 3778	gr/cgyc	DraII	2	1057 2214	rg/gnccy
AfeI	1	596	agc/gct	DraIII	2	2587 3178	cacnnn/gtg
AflIII	2	2945 5206	a/crygt	DrdI	2	3222 5104	gacnnnn/ngtcc
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BcoI	2	613 2267	c/ycgrg	Esp1396I	1	2430	ccannnn/ntgg
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BsaAI	4	340 1045 2458 3175	yac/gtr	HincII	3	1186 2530 2822	gty/rac
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BsmI	3	1854 2809 2908	gaatgc			3906 4065	
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Bsp1407I	1	2691	t/gtaca	MunI	1	2809	c/aattg
Bsp143II	4	598 3020 3028 4966	rgcgc/y	Mval269I	3	1854 2809 2908	gaatgc
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BspMI	1	1384	acctgc	NgolMI	2	783 3070	g/cgccc
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BsrDI	2	4082 4264	gcaatg	NsiI	1	5263	atgca/t
BsrFI	5	783 1978 2426 3070 4233	r/ccggy	NspBII	5	881 941 3682 4623 4868	cmg/ckg
BsrGI	1	2691	t/gtaca	NspI	1	5210	rcatg/y
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BssHII	1	779	g/cgccc	PaeR7I	1	613	c/tcgag
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BstSNI	1	340	tac/gta	Psp5II	1	1057	rg/gwccy
BstX2I	12	585 609 1390 1604 1972 2604 3671	r/gatcy	PspEI	1	2635	g/gtnacc



PstNHI	2	591 1736	g/ctagc	SstI	3	620 1161 1506	gagct/c
PvuI	1	3949	cgat/cg	StuI	1	1945	agg/cct
PvuII	1	941	cag/ctg	StyI	6	360 757 840 1473 1989 2340	c/cwggg
RcaI	2	3478 4486	t/catga	Tth1111I	2	860 1181	gaacn/nngtc
SacI	3	620 1161 1506	gagct/c	Van91I	1	2430	ccannnn/ntgg
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ScaI	1	3837	agt/act	VspI	2	7 4143	at/taat
SexAI	1	1404	a/ccwgg	XbaI	1	2713	t/ctaga
SfcI	6	1759 2545 2952 4072 4750 4941	c/tryag	XcmI	2	1571 2677	ccannnnn/nnntgg
Sfr274I	1	613	c/tcgag	XhoI	1	613	c/tcgag
SfuI	1	627	tt/cgaa	XhoII	12	585 609 1390 1604 1972 2604 3671	r/gatcy
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SspBI	1	2691	t/gtaca	XmnI	2	1705 3718	gaann/nnttc
SspI	2	3383 3513	aat/att	Zsp2I	1	5263	atgca/t

The following enzymes do not cut:

Acc65I, AccIII, AclNI, Afill, Aocl, Apal, Asp718I, AvriI, BanIII, Bbel, Bbul, BclI, Bfri, BlnI, Blpl, Bpu1102I, Bsa29I, Bsci, Bse21I, BseAI, BseCI, BsgI, BsiMI, BsiWI, BsmBI, Bsp106I, Bsp120I, Bsp13I, Bsp1720I, Bsp68I, BspDI, BspEI, BspTI, BspXI, Bst1107I, Bst98I, Bsu15I, Bsu36I, CellI, Cfr42I, Cfr9I, Clal, Cpol, Cspi, Cvnl, Eco32I, Eco81I, EcoNI, EcoRV, Ehel, Esp3I, Fbal, Fsel, KasI, Kpn2I, KpnI, Ksp22I, Kspl, MroI, MspCI, NarI, Nrul, Pacl, Pael, Pfl23II, PmeI, PshAI, PspAI, PspALI, PspLI, PspOMI, PstI, RsrII, SaclI, Sall, SbfI, Sfil, Sfr303I, Sgfl, SgrAI, Smal, Smil, SpeI, SphI, SplI, SrfI, Sse8387I, SstII, SunI, Swal, Vha464I, XmaI



## Related products:

### Current Alle<sup>ele</sup>ustious Fluorescent Protein Family Members:

The founding member is mTFP1.

**mTFPG3** is a green FP with 3 amino difference from mTFP1. It has a slightly red-shifted emission spectrum and is 1.5 fold brighter compared to EGFP. While being very bright, mTFPG3 can be photobleached within ~5 sec, about 30 times faster than EGFP, suitable for certain cell-based assays that require a bright FP with very short half-life.

**mTFP0.7** is a precursor during the evolution of mTFP1. It has photo-switchable properties like Dronpa that cycles between fluorescent and nonfluorescent states. It may be developed into components in PALM/SIM applications.

### Basic Vectors

Three vectors are available: pNCS-mWasabi, pmWasabi-N and pmWasabi-C.

### Subcellular Marker Vectors

Twenty six vectors are available.

### Vectors in Viral Vectors

All plasmid format vectors in Allele's Phoenix Retroviral vector or HiTiter Lentiviral Vectors.

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