

All^{ele}ustrious pmWasabi-EB3

(Cytoskeleton)

Catalog Number: ABP-FP-WEB3100

Size: 10ug Price: \$349.00

Introduction

All^{ele}ustrious pmWasabi-EB3 is a mammalian expression vector that encodes a fusion of human EB3 N-terminal to mWASABI. EB3, a ~31kD protein, is also known as microtubule-associated protein, RP/EB family, member 3 (MAPRE3), and APC binding protein. This product is a great marker for cytoplasmic microtubules.

All^{ele}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.

EB3 encodes a protein of 282 amino acids with 54% identity of EB1, both proteins were found to associate with the cytoplasmic microtubule network. EB3 is preferentially expressed in brain tissue and appears together with APCL, a CNS-specific APC (*adenomatous polyposis coli*) tumor suppressor. APCL-EB3 interaction may be specific to the CNS, possibly involving stability and extension of microtubules of neuritogenesis.

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

EB3.....652-1494

Linker.....1495-1515

mWasabi.....1516-2226

SV40 PolyA Signal.....2378-2428

bla Promoter.....2967-3071

Ampicillin Resistance Gene.....3056-3916

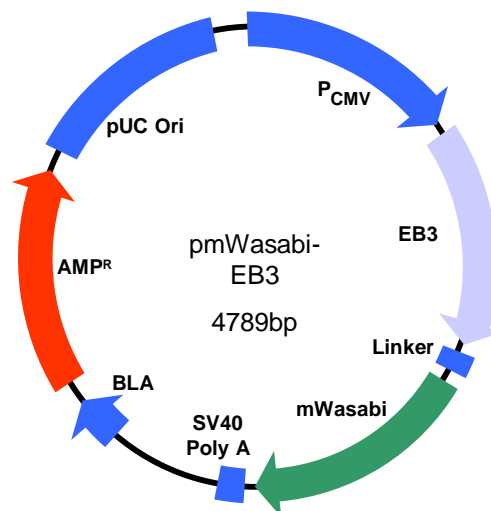
pUC Origin.....4065-4707

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. Nakagawa, H., Koyama, K., Murata, Y., Morito, M., Akiyama, T., Nakamura, Y. " EB3, a novel member of the EB1 family preferentially expressed in the central nervous system, binds to a CNS-specific APC homologue." *Oncogene* 2000 19(2) 210-6. uwana JP, Henderikx P, Mischo A, et al. "EB/RP gene family encodes tubulin binding proteins." *Int. J. Cancer* 1999 81 (2): 275–84.

SEQUENCE

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Acc16I	1	3620	tgc/gca	BstX2I	11	585 609 1082 1497 2129 3196 3213	r/gatcy	
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AccBSI	2	2559 3004	gagcgg	BstYI	11	585 609 1082 1497 2129 3196 3213	r/gatcy	
AccI	1	640	gt/mkac			3981 3993 4079 4090		
AccIII	1	1202	t/ccgga	BstZI	1	2228	c/ggccg	
AcsI	7	629 949 988 1253 2398 2883 2894	r/aatty	Bsu36I	1	1445	cc/tnagg	
AcyI	8	122 175 258 444 1132 1961 2009	gr/cgyc	CciNI	1	2228	gc/ggccgc	
		3303		CelII	1	1174	gc/tnagc	
AfeI	1	596	agc/gct	Cfr10I	5	1169 1503 1951 2595 3758	r/ccggy	
AflIII	2	2470 4731	a/crygt	CfrI	7	653 1167 1233 1599 2040 2228	y/ggcsr	
AgeI	1	1503	a/ccggt			3450		
AhdI	1	3843	gacnnn/ngtcc	Csp45I	1	627	tt/cgaa	
Alw21I	6	620 821 1355 3175 3260 4421	gwgwc/c	CvnI	1	1445	cc/tnagg	
Alw44I	3	817 3171 4417	g/tgcac	DraI	4	2286 3265 3957 3976	ttt/aaa	
AlwNI	1	4322	cagnnn/ctg	DraII	1	1739	rg/gnccy	
Ama87I	2	613 1792	c/ycgrg	DraIII	2	2112 2703	cacnnn/gtg	
AocI	1	1445	cc/tnagg	DrdI	2	2747 4629	gacnnn/ngtcc	
Aor51HI	1	596	agc/gct	DsaI	5	360 650 1514 1865 2180	c/crygg	
ApaLI	3	817 3171 4417	g/tgcac	EaeI	7	653 1167 1233 1599 2040 2228	y/ggcsr	
ApoI	7	629 949 988 1253 2398 2883 2894	r/aatty			3450		
AseI	2	7 3668	at/taat	EagI	1	2228	c/ggccg	
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Asp700I	1	3243	gaann/nnttc	Eam1105I	1	3843	gacnnn/ngtcc	
AspEI	1	3843	gacnnn/ngtcc	EarI	3	807 1467 3054	ctcttc	
AspHI	6	620 821 1355 3175 3260 4421	gwgwc/c	Ecl136II	2	618 1353	gag/ctc	
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BalI	1	1601	tgg/cca	Eco105I	1	340	tac/gta	
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BanI	4	465 1648 2659 3890	g/gyrcc	Eco24I	4	620 1355 1686 2629	grgcy/c	
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BlpI	1	1174	gc/tnagc	EcoO109I	1	1739	rg/gnccy	
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BpmI	4	1311 1671 2034 3758	ctggag	EcoRI	1	629	g/aattc	
Bpu1102I	1	1174	gc/tnagc	EcoT14I	4	360 650 1514 1865	c/cwggg	
Bpu14I	1	627	tt/cgaa	EcoT22I	1	4788	atgca/t	
BpuAI	1	1482	gaagc	ErhI	4	360 650 1514 1865	c/cwggg	
BsaAI	3	340 1983 2700	yac/gtr	Esp1396I	3	792 1275 1955	ccannnn/ntgg	
BsaBI	1	2246	gatnn/nmatc	FauNDI	1	234	ca/tatg	
BsaHI	8	122 175 258 444 1132 1961 2009	gr/cgyc	FbaI	1	1077	g/gatca	
		3303		FriOI	4	620 1355 1686 2629	grgcy/c	
BsaI	3	1539 1950 3776	ggtctc	FspI	1	3620	tgc/gca	
BsaMI	3	1201 2334 2433	gaatgc	GsuI	4	1311 1671 2034 3758	ctggag	
BsaOI	5	1508 2231 3325 3474 4397	cgry/cg	HaeII	5	598 1060 2545 2553 4491	rgcgc/y	
BsaWI	6	600 1202 1503 3547 4378 4525	w/ccggw	HinII	8	122 175 258 444 1132 1961 2009	gr/cgyc	
Bse118I	5	1169 1503 1951 2595 3758	r/ccggy			3303		
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Bse8I	1	2246	gatnn/nmatc	HindII	5	641 723 912 2055 2347	gty/rac	
BseAI	1	1202	t/ccgga	HindIII	1	622	a/agctt	
BseRI	2	1536 1875	gaggag	HpaI	1	2347	ggt/aac	
BsgI	1	738	gtgcag	Hsp92I	8	122 175 258 444 1132 1961 2009	gr/cgyc	
Bsh1285I	5	1508 2231 3325 3474 4397	cgry/cg			3303		
Bsh1365I	1	2246	gatnn/nmatc	Kpn2I	1	1202	t/ccgga	
BshNI	4	465 1648 2659 3890	g/gyrcc	Ksp22I	1	1077	t/gatca	
BsiEI	5	1508 2231 3325 3474 4397	cgry/cg	Ksp32I	3	807 1467 3054	ctcttc	
BsiHKAI	6	620 821 1355 3175 3260 4421	gwgwc/c	LspI	1	627	tt/cgaa	
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BsmI	3	1201 2334 2433	gaatgc	MflI	11	585 609 1082 1497 2129 3196 3213	r/gatcy	
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Bsp13I	1	1202	t/ccgga	MluNI	1	1601	tgg/cca	
Bsp1407I	1	2216	t/gtaca	Mph1103I	1	4788	atgca/t	
Bsp143II	5	598 1060 2545 2553 4491	rgcgc/y	MroI	1	1202	t/ccgga	
Bsp1720I	1	1174	gc/tnagc	MroNI	2	1169 2595	g/ccggc	
Bsp19I	4	360 650 1514 1865	c/catgg	MscI	1	1601	tgg/cca	
BspCI	1	3474	cgat/cg	MslI	9	365 676 796 1373 1516 1864 3072	caynn/nmrtg	
BspEI	1	1202	t/ccgga			3431 3590		
BspHI	2	3003 4011	t/catga	Msp17I	8	122 175 258 444 1132 1961 2009	gr/cgyc	
BspLU11I	1	4731	a/catgt			3303		
BsrBI	2	2559 3004	gagcgg	MspAII	4	1275 3207 4148 4393	cmg/ckg	
BsrBRI	1	2246	gatnn/nmatc	MunI	1	2334	c/aattg	
BsrDI	3	1183 3607 3789	gcaatg	Mva1269I	3	1201 2334 2433	gaatgc	
BsrFI	5	1169 1503 1951 2595 3758	r/ccggy	NaeI	2	1171 2597	gcc/ggc	
BsrGI	1	2216	t/gtaca	NcoI	4	360 650 1514 1865	c/catgg	
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BstDSI	5	360 650 1514 1865 2180	c/crygg	NsiI	1	4788	atgca/t	
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BstH2I	5	598 1060 2545 2553 4491	rgcgc/y	NspI	3	801 1158 4735	rcatg/y	
BstI	1	1497	g/gatcc	NspV	1	627	tt/cgaa	
BstMCI	5	1508 2231 3325 3474 4397	cgry/cg	Paer7I	1	613	c/tcgag	
BstPI	1	2160	g/gtnacc	PflMI	3	792 1275 1955	ccannnn/ntgg	
				PinAI	1	1503	a/ccgct	



Ple19I	1	3474	cgat/cg	SfuI	1	627	tt/cgaa
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PshBI	2	7 3668	at/taat	SspBI	1	2216	t/gtaca
Psp124BI	2	620 1355	gagct/c	SspI	2	2908 3038	aat/att
Psp1406I	2	3241 3614	aa/cggt	SstI	2	620 1355	gagct/c
PspEI	1	2160	g/gtnacc	StyI	4	360 650 1514 1865	c/cwggg
PstI	1	638	ctgca/g	Van91I	3	792 1275 1955	ccannnn/ntgg
PstNHI	1	591	g/ctagc	VneI	3	817 3171 4417	g/tgcac
PvuI	1	3474	cgat/cg	VspI	2	7 3668	at/taat
PvuII	1	1275	cag/ctg	XbaI	1	2238	t/ctaga
RcaI	2	3003 4011	t/catga	XcmI	1	2202	ccannnnn/nnntgg
SacI	2	620 1355	gagct/c	XhoI	1	613	c/tcgag
SalI	1	639	g/tcgac	XhoII	11	585 609 1082 1497 2129 3196 3213	r/gatcy
SapI	2	807 1468	gctcttc			3981 3993 4079 4090	
ScaI	1	3362	agt/act	XmaIII	1	2228	c/ggccg
SfcI	7	634 926 2070 2477 3597 4275 4466	c/tryag	XmnI	1	3243	gaann/nnttc
Sfr274I	1	613	c/tcgag	Zsp2I	1	4788	atgca/t

The following enzymes do not cut:

AatI, Acc65I, AclNI, AfIII, Apal, Ascl, Asp718I, Aspl, Atsl, AvrII, BanIII, BbeI, BbrPI, Bbul, BfrI, BlnI, Bsa29I, BscI, BseCI, BsePI, BsiWI, BsmBI, Bsp106I, Bsp120I, Bsp68I, BspDI, BspMI, BspTI, BspXI, BssHII, Bst1107I, Bst98I, Bsu15I, Cfr42I, Cfr9I, ClaI, Cpol, Cspl, Eco147I, Eco32I, Eco72I, EcoRV, Ehel, Esp3I, FseI, KasI, KpnI, KspI, MspCI, NarI, Nrul, PacI, PaeI, Pfl23II, PmaCI, Pme55I, Pmel, PmlI, PpuMI, PshAI, Psp5II, PspAI, PspALI, PspLI, PspOMI, RsrII, SacII, SbfI, SexAI, Sfil, Sfr303I, Sgfl, SgrAI, Smal, SmlI, Spel, SphI, SphI, SrfI, Sse8387I, SseBI, SstII, Stul, SunI, Swal, Tth111I, Vha464I, XmaI

Related products:**Current Alle^{ele}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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