

All^{ele}ustrious pmWasabi-Vinculin

(Cytoskeleton)

Catalog Number: ABP-FP-WVIN100

Size: 10ug Price: \$349.00

Introduction

All^{ele}ustrious pmTFP1-Vinculin is a mammalian expression vector that expresses mTFP1 fused to the N-terminus of a human vinculin (VCL) protein. This product can be a great tool for your research involving focal adhesions.

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.

Vinculin is a cytoskeletal protein associated with cell-cell and cell-matrix junctions, where it is believed to function as one of several interacting proteins anchoring F-actin to the membrane. There are two transcription variants of this gene. Variant 2, as in this product, lacks a 3' coding exon. It encodes a shorter isoform (VCL), which is the major talin-binding protein in platelets. The protein contains an acidic N-terminal domain and a basic C-terminal domain separated by a proline-rich middle segment.

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

mWasabi.....613-1320

Linker.....1321-1389

Vinculin.....1390-4590

SV40 PolyA Signal.....4742-4792

bla Promoter.....5331-5435

Ampicillin Resistance Gene.....5420-6280

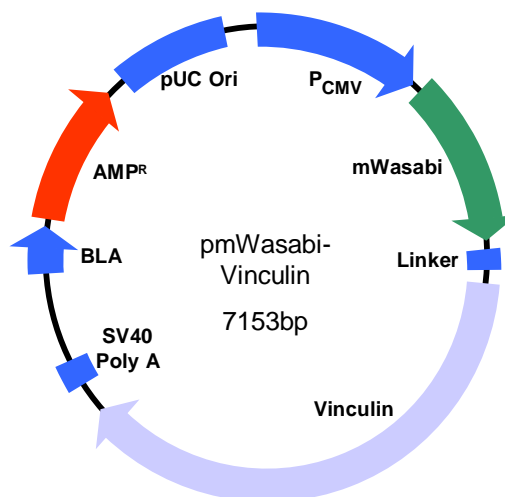
pUC Origin.....6429-7071

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. Critchley DR (2005). "Cytoskeletal proteins talin and vinculin in integrin-mediated adhesion" *Biochem. Soc. Trans.* 32 (Pt 5): 831-6. Hazan RB, Kang L, Roe S, et al. (1998). "Vinculin is associated with the E-cadherin adhesion complex". *J. Biol. Chem.* 272 (51): 32448-53.

SEQUENCE

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AatII	5	125 178 261 447 1109	gacgt/c	BspI43III	5	598 3235 4909 4917 6855	rgcgc/y
AccI13I	1	5726	agt/act	BspI720I	1	2447	gc/tnagg
AccI6I	1	5984	tgc/gca	BspI9I	3	360 611 962	c/catgg
Acc65I	2	4213 4580	g/gtacc	BspCI	2	1415 5838	cgat/cg
AccB1I	7	465 745 3231 4213 4580 5023 6254	g/gyrcc	BspDI	2	2552 3497	at/cgat
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AccIII	1	1321	t/ccgga	BspLUII	1	7095	a/catgt
AcsI	7	1350 1808 3705 4529 4762 5247 5258	r/aatty	BspMI	3	1756 2456 2809	acctgc
AcyI	8	122 175 258 444 1058 1106 3232 5667	gr/cgyc	BspXI	2	2552 3497	at/cgat
AfeI	1	596	agc/gct	BsrBI	2	4923 5368	gagcgg
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AhdI	1	6207	gacnnn/ngtgc	BsrFI	7	600 1048 1431 2427 2844 4959 6122	r/crygg
Alw21I	9	1341 1934 1949 2477 3102 4306 5539 5624 6785	gwgw/c	BsrGI	2	1313 2859	t/gtaca
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Ama87I	6	889 1334 1362 1700 2765 3392	c/ycgrg	BssT1I	11	360 611 962 2049 2691 2771 3875 4006 4241 4253 4283	c/cwgg
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Asp700I	3	3368 3810 5607	gaann/nnttc	BstMCI	9	605 1386 1415 1538 3320 4595 5689 5838 6761	cgry/cg
Asp718I	2	4213 4580	g/tgacc	BstPI	1	1257	g/gtnacc
AspEI	1	6207	gacnnn/ngtgc	BstSFI	8	1167 2087 2797 2806 4841 5961 6639 6830	c/tryag
AspHI	9	1341 1934 1949 2477 3102 4306 5539 5624 6785	gwgw/c	BstSNI	1	340	tac/gta
AvaI	6	889 1334 1362 1700 2765 3392	c/ycgrg	BstX2I	19	585 1226 1330 1445 2291 2419 2577 2727 3006 3132 3674 3714 3857 5560 5577 6345 6357 6443 6454	r/gatcy
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AvrII	1	4006	c/ctagg	BstYI	19	585 1226 1330 1445 2291 2419 2577 2727 3006 3132 3674 3714 3857 5560 5577 6345 6357 6443 6454	r/gatcy
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Bbv12I	9	1341 1934 1949 2477 3102 4306 5539 5624 6785	gwgw/c	CvnI	2	3089 3899	cc/tnagg
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Bsh1365I	1	4610	gatnn/nnatc	EcoO65I	1	1257	g/gtnacc
BshNI	7	465 745 3231 4213 4580 5023 6254	g/gyrcc	EcoRI	2	1350 3705	g/aatc
BsiEI	9	605 1386 1415 1538 3320 4595 5689 5838 6761	cgry/cg	EcoRV	1	3853	gat/atc
BsiHKAI	9	1341 1934 1949 2477 3102 4306 5539 5624 6785	gwgw/c	EcoT14I	11	360 611 962 2049 2691 2771 3875 4006 4241 4253 4283	c/cwgg
BsiI	4	1473 3100 5543 6927	ctcgtg	EcoT22I	1	7152	atgca/t
BsiMI	1	1321	t/ccgga	EheI	1	3233	ggc/gcc
BsmI	4	1640 3373 4698 4797	gaatgc	ErhI	11	360 611 962 2049 2691 2771 3875	c/cwgg
BsoBI	6	889 1334 1362 1700 2765 3392	c/ycgrg				
Bsp106I	2	2552 3497	at/cgat				
Bsp119I	2	1348 4533	tt/cgaa				
Bsp13I	1	1321	t/ccgga				



Esp1396I	3	4006 4241 4253 4283		NspBII	7	2857 2892 3039 3051 5571 6512	cmg/ckg
FauNDI	1	234	ccannnn/ntgg	NspI	2	1392 7099	rcatg/y
FbaI	1	2385	ca/tatg	NspV	2	1348 4533	tt/cgaa
FriOI	4	783 1341 1934 4993	t/gatca	PaeI	1	1392	gcatg/c
FspI	1	5984	grgcy/c	PaeR7I	4	1334 1362 1700 2765	c/tcgag
GsuI	5	768 1131 1431 2761 6122	tg/cgca	PflMI	3	1052 2234 2587	ccannnn/ntgg
HaeII	5	598 3235 4909 4917 6855	ctggag	PinAI	2	600 2427	a/ccggt
HinII	8	122 175 258 444 1058 1106 3232	rgcgc/y	Ple19I	2	1415 5838	cgat/cg
		5667	gr/cgyc	Pme55I	3	3376 4011 4258	agg/cct
HincII	2	1152 4711	gty/rac	Ppu10I	1	7148	a/tgcat
HindII	2	1152 4711	gty/rac	PpuMI	1	3996	rg/gwccy
HindIII	5	1343 1372 1648 2063 3304	a/agctt	PshBI	3	7 2111 6032	at/taat
HpaI	1	4711	gtt/aac	Psp124BI	2	1341 1934	gagct/c
Hsp92I	8	122 175 258 444 1058 1106 3232	gr/cgyc	Psp1406I	2	5605 5978	aa/cggt
		5667		Psp5II	1	3996	rg/gwccy
KasI	1	3231	g/gcgcc	PspBI	1	1257	g/gtnacc
Kpn2I	1	1321	t/ccgga	PstI	2	2801 2810	ctgca/g
KpnI	2	4217 4584	ggtag/c	PstNHI	1	591	g/ctagc
Ksp22I	1	2385	t/gatca	PvuI	2	1415 5838	cgat/cg
Ksp632I	6	1604 2192 2607 3261 4041 5418	ctcttc	PvuII	3	2857 3039 3051	cag/ctg
LspI	2	1348 4533	tt/cgaa	RcaI	2	5367 6375	t/catga
MamI	1	4610	gatnn/nnatc	SacI	2	1341 1934	gagct/c
MfeI	1	4698	c/aattg	SapI	1	2608	gctcttc
MflI	19	585 1226 1330 1445 2291 2419	r/gatcy	ScaI	1	5726	agt/aet
		2577 2727 3006 3132 3674 3714		SexAI	1	1454	a/cwgggt
		3857 5560 5577 6345 6357 6443		SfcI	8	1167 2087 2797 2806 4841 5961	c/tryag
		6454				6639 6830	
MluI	1	4834	a/cgctt	Sfr274I	4	1334 1362 1700 2765	c/tcgag
MluNI	9	698 1903 2434 2776 2788 2833	tgg/cca	SfuI	2	1348 4533	tt/cgaa
		3613 3874 4282		SgrAI	1	2427	cr/ccggy
Mph1103I	1	7152	atgca/t	SnaBI	1	340	tac/gta
MroI	1	1321	t/ccgga	SphI	1	1392	gcatg/c
MroNI	1	4959	g/ccggc	SseBI	3	3376 4011 4258	agg/cct
MscI	9	698 1903 2434 2776 2788 2833	tgg/cca	SspBI	2	1313 2859	t/gtaca
		3613 3874 4282		SspI	2	5272 5402	aat/att
MslI	9	365 613 961 1393 2892 4450 5436	caynn/nnrtg	SstI	2	1341 1934	gagct/c
		5795 5954		StuI	3	3376 4011 4258	agg/cct
Msp17I	8	122 175 258 444 1058 1106 3232	gr/cgyc	StyI	11	360 611 962 2049 2691 2771 3875	c/cwggg
		5667				4006 4241 4253 4283	
MspAII	7	2857 2892 3039 3051 5571 6512	cmg/ckg	Van91I	3	1052 2234 2587	ccannnn/ntgg
		6757		VneI	3	4302 5535 6781	g/tgcac
MunI	1	4698	c/aattg	VspI	3	7 2111 6032	at/taat
Mval269I	4	1640 3373 4698 4797	gaatgc	XbaI	1	4602	t/ctaga
NaeI	1	4961	gcc/ggc	XcmI	6	1299 2826 3210 3552 3774 4452	ccannnnn/nnntgg
NarI	1	3232	gg/cgcc	XhoI	4	1334 1362 1700 2765	c/tcgag
NcoI	3	360 611 962	c/catgg	XhoII	19	585 1226 1330 1445 2291 2419	r/gatcy
NdeI	1	234	ca/tatg			2577 2727 3006 3132 3674 3714	
NgoAIV	1	4959	g/ccggc			3857 5560 5577 6345 6357 6443	
NgoMI	1	4959	g/ccggc			6454	
NheI	1	591	g/ctagc	XmaIII	4	1383 1535 3317 4592	c/ggccg
NotI	1	4592	gc/ggccgc	XmnI	3	3368 3810 5607	gaann/nnttc
NsiI	1	7152	atgca/t	Zsp2I	1	7152	atgca/t

The following enzymes do not cut:

AccI, AclNI, AfIII, ApaI, Ascl, Aspl, AtsI, BbrPI, BfrI, BsePI, BsiWI, BsmBI, Bsp120I, Bsp68I, BspTI, BssHII, Bst1107I, Bst98I, Cfr42I, Cfr9I, CpoI, Cspl, Eco72I, Esp3I, FseI, Kspl, MspCI, NruI, PacI, Pfl23II, PmaCI, PmeI, PmlI, PshAI, PspAI, PspALI, PspLI, PspOMI, RsrII, SacII, Sall, SbfI, SfiI, Sfr303I, Sgfl, Smal, Smil, SpeI, SplI, SrfI, Sse8387I, SstII, SunI, SwaI, 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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