

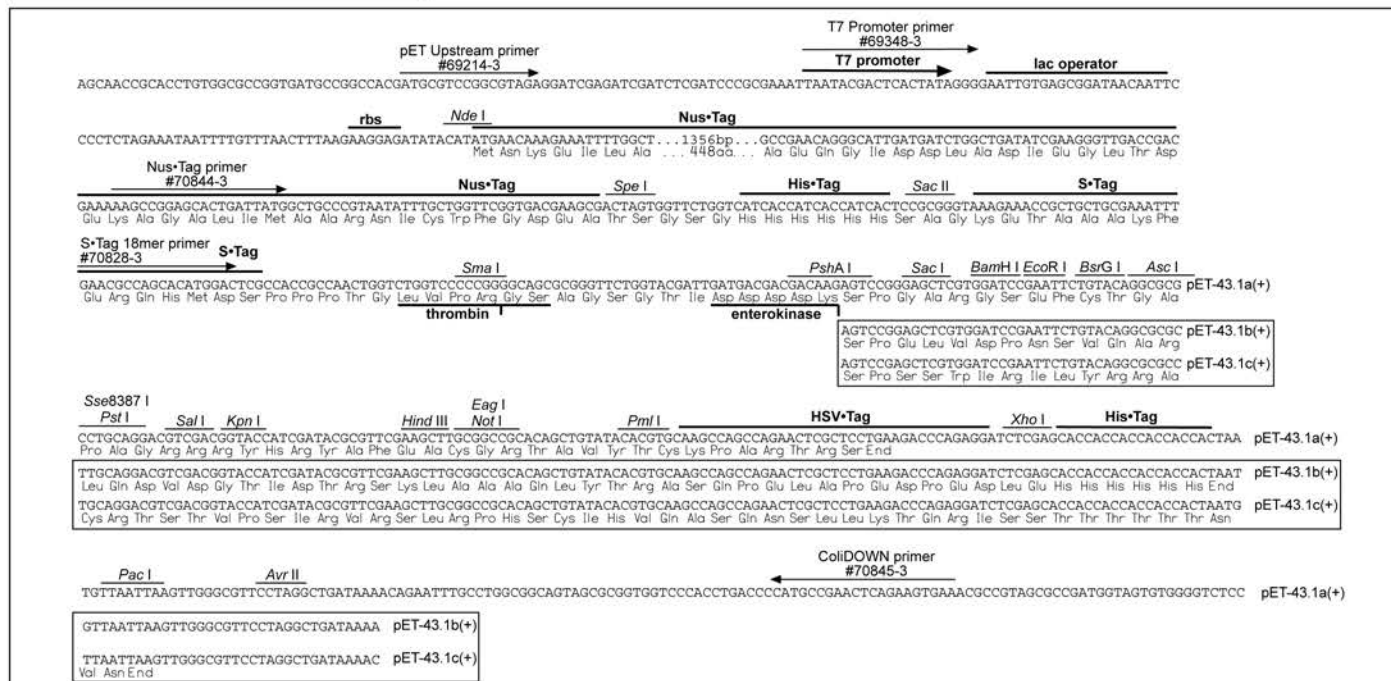
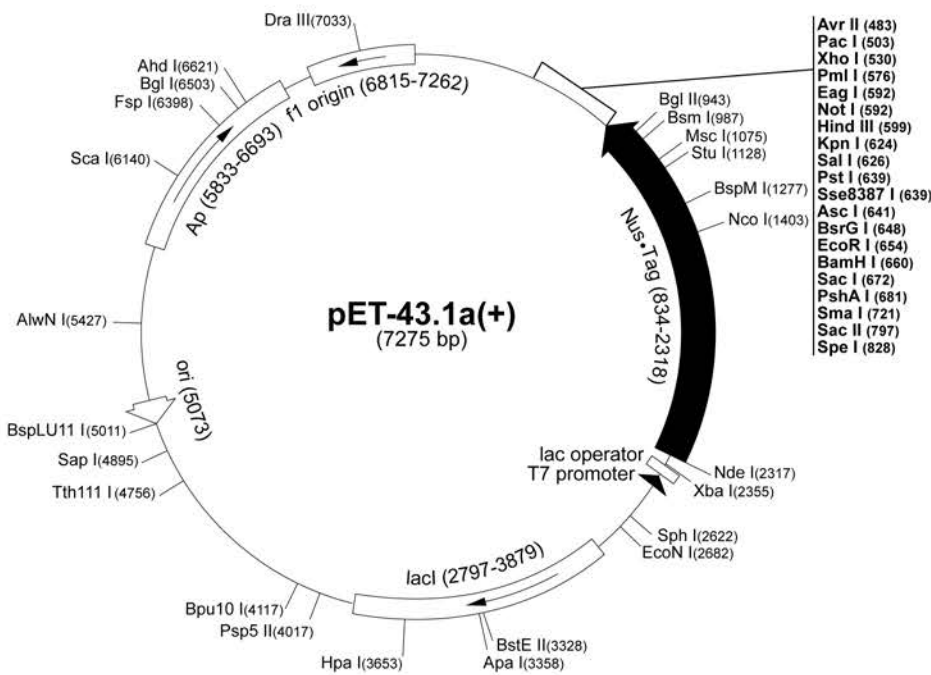
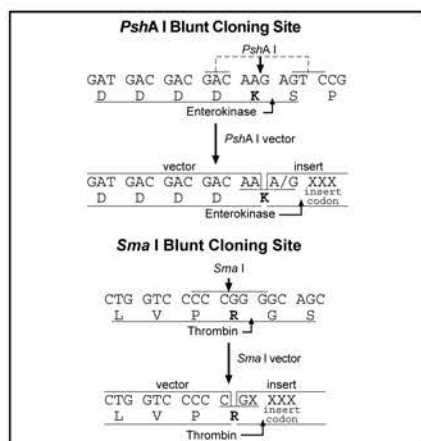
pET-43.1a-c(+) Vector

	Cat. No.
pET-43.1a(+) DNA	70939-3
pET-43.1b(+) DNA	70940-3
pET-43.1c(+) DNA	70941-3

pET-43.1a(+) sequence landmarks

T7 promoter	2390-2406
T7 transcription start	2390
Nus•Tag™ coding sequence	834-2318
His•Tag® coding sequence	801-818
S•Tag™ coding sequence	747-791
Multiple cloning sites (Sma I-Xho I)	721-686
HSV•Tag® coding sequence	537-572
His•Tag® coding sequence	513-530
T7 terminator	27-73
lacI coding sequence	2797-3879
pBR322 origin	5073
bla (Ap) coding sequence	5833-6693
f1 origin	6815-7262

The pET-43.1 series of vectors are designed for cloning and high-level expression of peptide sequences fused with the 491 aa Nus•Tag™ protein. Unique sites are shown on the circle map. Note that the sequence is numbered by the pBR322 convention, so the T7 expression region is reversed on the circle map. The cloning/expression region of the coding strand transcribed by T7 RNA polymerase is shown below. The f1 origin is oriented so that infection with helper phage will produce virions containing single stranded DNA that corresponds to the coding strand. Therefore, single stranded sequencing should be performed using the ColiDOWN primer (cat. no. 70845-3). Vector encoded sequence can be completely removed when cloning into the *PshA* I or *Sma* I sites (as shown below) by cleaving the Nus•Tag fusion protein with enterokinase or thrombin, respectively.



pET-43.1a(+) Restriction Sites

Enzyme	# Sites	Locations	Enzyme	# Sites	Locations	Enzyme	# Sites	Locations
AatII	2	633 2188	DdeI	14		Sau3AI	42	
AccI	4	580 627 1529 4781	DpnI	42		Sau96I	20	
AcII	99		DraI	3	6043 6735 6754	Scal	1	6140
AflIII	4	575 608 3147 5011	DraIII	1	7033	ScrFI	33	
AhdI	1	6621	DrdI	3	4704 5119 6988	SfaNI	23	
AluI	27		Dsal	4	794 964 1403 2584	Sfcl	7	635 2294 2389 5276 5467
Alw26I	8	371 2844 3249 3375 3762	EaeI	8	592 971 1073 1360 2455			
		4652 5778 6555			2587 3821 6228	SgrAI	2	1899 2466
AlwI	20		EagI	1	592	SmaI	1	721
AlwNI	1	5427	EarI	3	2765 4895 5822	SpeI	1	828
Apal	1	3358	Ecl136II	1	670	SphI	1	2622
ApalI	4	3127 4825 5325 5949	Eco47III	2	2552 4265	Sse8387I	1	639
ApoI	7	466 654 768 2303 3422	Eco57I	4	532 1826 5559 5955	SspI	2	857 6825
		6835 6846	EcoNI	1	2682	StuI	1	1128
AscI	1	641	EcoO109I	3	53 2580 4017	StyI	4	57 483 1403 2099
AvaI	2	530 719	EcoRI	1	654	TalI	25	
Avall	7	440 725 3699 4017 4296	EcoRII	13		TaqI	28	
		6257 6479	EcoRV	2	911 1502	TfiI	4	3826 4061 4565 4986
AvrII	1	483	EheI	4	2471 2492 2606 3788	ThaI	52	
BamHI	1	660	FauI	20		TseI	28	
BanI	10	620 1450 2469 2490 2604	Fnu4HI	52		Tsp45I	10	839 1725 2112 3328 4450
		3067 3786 3916 6668 7070	FokI	14				4663 4758 6148 6359 7206
BanII	5	672 2531 2545 3358 7108	FspI	1	6398	Tsp509I	23	
BbsI	5	538 1208 3293 3632 4129	HaeII	15		TspRI	16	
BbvI	28		HaeIII	31		Tth111I	1	4756
			HgaI	15		VspI	4	2404 3832 3891 6446
BcgI	3	3473 4588 6083	HhaI	59		XbaI	1	2355
BclI	2	1933 3161	HincII	4	628 900 1295 3653	XcmI	3	3003 3519 3537
Bfal	10	70 484 829 2356 3990	HindIII	1	599	XhoI	1	530
		4025 5506 6428 6763 7184	Hinfl	16		XmnI	3	2251 4569 6021
BglI	1	6503	HpaI	1	3653	Enzymes that do not cut pET-43.1a(+):		
BglII	1	943	HphI	29		AflII	BseRI	Bsu36I FseI MunI NheI NsiI
BpmI	4	2985 3474 4538 6552	KpnI	1	624	PinAI	PmeI	RsrII SanDI SexAI SfiI SglI
Bpu10I	1	4117	MaeIII	22		SnaBI	SrfI	SunI SwaI UbaEI
Bpu1102I	2	80 1278	MbolI	25				
BsaI	2	371 6555	MluI	2	608 3147			
BsaAI	3	576 4763 7033	MnlI	28				
BsaBI	3	2420 2430 4208	MscI	1	1075			
BsaHI	9	200 630 2185 2470 2491	MseI	33				
		2605 3104 3787 6081	MslI	11				
BsaJI	17		MspA1I	13				
BsaWI	8	2 1576 3466 3969 4200	MspI	42				
		5217 5364 6325	MwoI	47				
BsgI	4	1956 2998 3198 4171	NarI	4	2470 2491 2605 3787			
BsiEI	10	595 1115 1253 1789 2170	NciI	20				
		3932 4927 5351 6103 6252	NcoI	1	1403			
BsiHKAII	11		NdeI	1	2317			
BsII	26		NgoAIV	2	2457 7134			
BsmBI	2	3762 4652	NlaIII	28				
BsmFI	5	453 738 2608 4282 7248	NlaIV	25				
BsmI	1	987	NotI	1	592			
Bsp1286I	15		NruI	3	1210 1635 2259			
BspEI	2	2 4200	NspI	4	2622 4356 4648 5015			
BspLU11I	1	5011	NspV	2	604 2245			
BspMI	1	1277	PacI	1	503			
BsrI	29		PfIMI	2	758 2729			
BsrBI	6	249 1323 2376 4944 5778	PleI	12				
		7177	PmlI	1	576			
BsrDI	6	1073 1454 3194 3560 6387	PshAI	1	681			
		6561	Psp1406I	6	237 2809 4336 6019 6392			
BsrFI	9	1027 1383 1447 1899 2457			6818			
		2466 2833 6536 7134	Psp5II	1	4017			
BsrGI	1	648	PstI	1	639			
BssHII	5	641 1547 1739 2228 3558	PvuI	3	1253 2170 6252			
BssSI	4	665 1619 5184 5952	PvuII	4	586 3747 3840 4602			
Bst1107I	2	581 4782	RcaI	4	2545 5731 5780 5812			
BstEII	1	3328	RsaI	8	622 650 701 956 2178			
BstXI	3	2949 3078 3201			3294 4817 6140			
BstYI	13		SacI	1	672			
CacBI	52		SacII	1	797			
ClaI	5	615 1504 1582 2170 2424	Sall	1	626			
CviJI	112		SapI	1	4895			