

pET-28a-c(+) Vectors

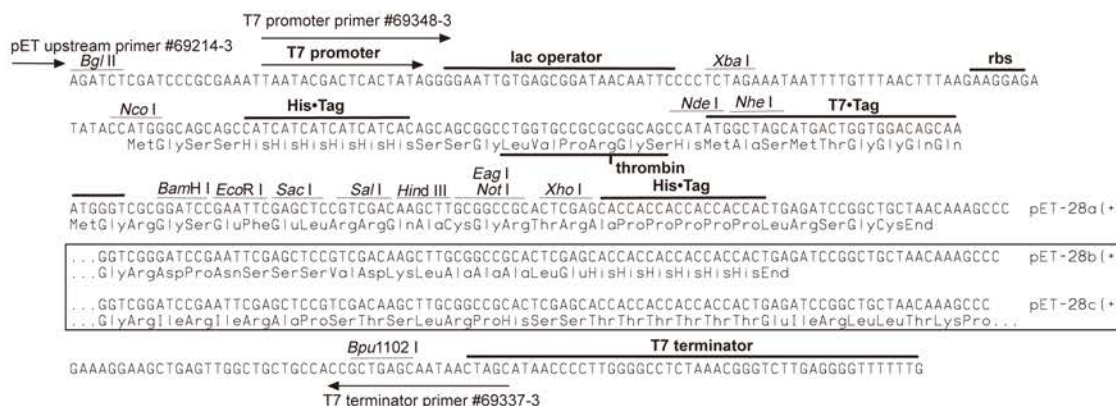
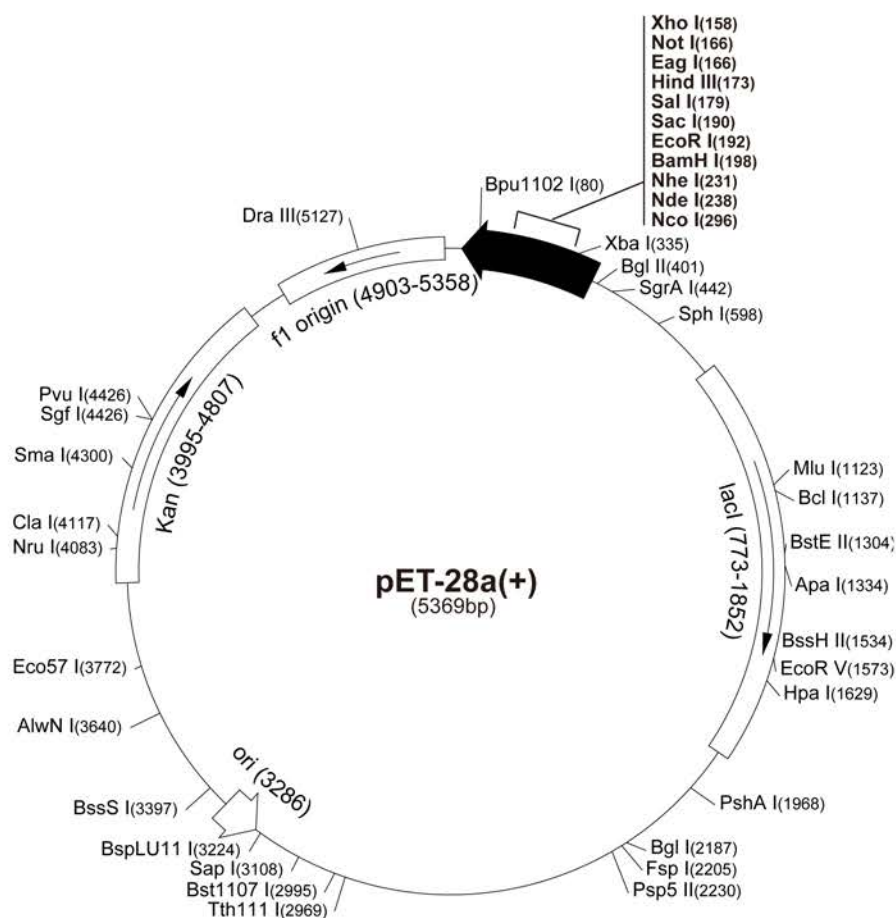
	Cat. No.
pET-28a DNA	69864-3
pET-28b DNA	69865-3
pET-28c DNA	69866-3

The pET-28a-c(+) vectors carry an N-terminal His•Tag®/thrombin/T7•Tag® configuration plus an optional C-terminal His•Tag sequence. 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 circular 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 T7 terminator primer (Cat. No. 69337-3).

pET-28a(+) sequence landmarks

T7 promoter	370-386
T7 transcription start	369
His•Tag coding sequence	270-287
T7•Tag coding sequence	207-239
Multiple cloning sites	
(BamH I - Xho I)	158-203
His•Tag coding sequence	140-157
T7 terminator	26-72
lacI coding sequence	773-1852
pBR322 origin	3286
Kan coding sequence	3995-4807
f1 origin	4903-5358

The maps for pET-28b(+) and pET-28c(+) are the same as pET-28a(+) (shown) with the following exceptions: pET-28b(+) is a 5368bp plasmid; subtract 1bp from each site beyond BamH I at 198. pET-28c(+) is a 5367bp plasmid; subtract 2bp from each site beyond BamH I at 198.



pET-28a-c(+) cloning/expression region

pET-28a(+) Restriction Sites

Enzyme	# Sites	Locations	Enzyme	# Sites	Locations	Enzyme	# Sites	Locations
AccI	2	180 2994	BstEII	1	1304	Pil1108I	1	2010
AccII	7	890 1618 1949 2733 2874	BstXI	3	925 1054 1177	PIIMI	2	705 4689
		3176 4967	BstYI	9	132 198 401 687 1899	PleI	9	384 672 759 1555 3118
Acil	77				2416 3865 3876 4675			3603 4658 5062 5070
AlIII	2	1123 3224	Cac8I	40		PshAI	1	1968
AluI	22		CjeI	26		Psp5II	1	2230
AlwI	13		CjePI	30		Psp1406I	4	785 2153 2549 4912
Alw21I	7	159 190 623 1107 2218	Clal	1	4117	PvuI	1	4426
		3042 3542	CviJI	86		PvuII	3	1723 1816 2815
Alw44I	3	1103 3038 3538	CviRI	22		RcaI	3	521 3944 4819
AlwNI	1	3640	Ddel	11		RsaI	3	1270 3030 4261
Apal	1	1334	DpnI	21		SacI	1	190
ApaBI	1	807	DrallI	1	5127	Sall	1	179
ApoI	6	192 1398 4039 4223 4929	DrdI	3	2917 3332 5082	SapI	1	3108
		4940	DrdII	2	846 5132	Sau96I	14	
AvaI	2	158 4298	Dsal	3	296 560 2196	Sau3AI	21	
Avall	5	1675 2051 2139 2230 2509	EaeI	4	166 431 563 1797	ScrFI	22	
BamHI	1	198	EagI	1	166	SfaNI	23	
BanI	9	253 445 466 580 1043	EarI	3	741 3108 4239	Sfcl	4	369 3489 3680 5346
		1762 1892 2018 5164	Ecil	3	900 3298 3444	Sgfl	1	4426
BanII	6	190 507 521 1334 4081	Eco47III	3	528 2029 2478	SgrAI	1	442
		5202	Eco57I	1	3772	SmaI	1	4300
BbsI	4	1269 1608 1982 2342	EcoNI	2	658 4338	SphI	1	598
BbvI	27		EcoO109I	3	53 556 2230	SspI	2	4351 4919
BccI	14		EcoRI	1	192	StyI	2	57 296
Bce83I	6	21 1937 2107 3315 3613	EcoRII	10	256 846 1161 1701 1758	TaqI	15	
		3854			3250 3371 3384 4314 4671	TaqII	6	1031 1249 1922 3126 4680
BceII	6	642 983 1610 3726 4745	EcoRV	1	1573			5031
		5153	FauI	17		TfiI	9	1802 2104 2274 2778 3199
BcgI	9	160 194 228 1415 1449	FokI	9	1169 1178 2443 2505 2583			4337 4393 4565 4656
		1949 1983 2801 2835			2769 2910 4064 4670	ThaI	38	
BclI	1	1137	Fspl	1	2205	TseI	27	
Bfal	7	70 232 336 2238 3719	GdIII	4	166 431 563 1797	Tsp45I	7	1304 2132 2663 2876 2971
		4026 5278	HaeI	6	851 2172 3239 3250 3702			4573 5300
BglI	1	2187			4513	Tsp509I	20	
BglII	1	401	HaeII	14		Tth111I	1	2969
BmgI	1	1332	HaeIII	24		Tth111II	8	962 1655 2685 3814 3821
BpmI	4	961 1450 2084 2751	HgaI	11				3853 4262 4389
Bpu10I	2	2330 4443	HgiEII	2	721 3810	UbaII	21	
Bpu1102I	1	80	HhaI	47		VspI	5	384 1808 1867 4625 4814
BsaAI	2	2976 5127	Hin4I	3	1022 4112 4654	XbaI	1	335
BsaBI	3	400 406 2421	HincII	2	181 1629	XcmI	3	979 1495 1513
BsaHI	5	446 467 581 1080 1763	HindIII	1	173	XhoI	1	158
BsaJI	10	57 296 560 566 1758	HinfI	18		XmnI	2	2782 4815
		2196 3384 4297 4298 4699	HpaI	1	1629			
BsaWI	7	2 1442 1945 2413 3430	HphI	16				
		3577 4561	MaeII	14				
BsaXI	2	1782 5075	MaeIII	16				
Bsbl	2	2940 5034	MbolI	12				
BscGI	11		MluI	1	1123			
BsgI	3	974 1174 2384	MmeI	7	3439 3623 4068 4262 4624			
Bsil	1	3397			4633 5104			
BsiEI	5	169 1908 3140 3564 4426	MnII	25				
BsII	23		MseI	25				
BsmI	2	4310 4387	MslI	6	1175 1463 1493 2211 2406			
BsmAI	6	820 1225 1351 1738 2865			2797			
		4442	MspI	29				
BsmBI	3	1738 2865 4442	MspAII	9	84 264 1153 1723 1816			
BsmFI	4	584 2125 2495 5342			2815 2934 3566 3811			
BsoFI	48		MwoI	39				
Bsp24I	12		NarI	4	446 467 581 1763			
Bsp1286I	12		NciI	12				
BspEI	2	2 2413	NcoI	1	296			
BspGI	1	2750	NdeI	1	238			
BspLU11I	1	3224	NgoAIV	4	433 2021 2181 5228			
BsrI	22		NheI	1	231			
BsrBI	4	356 3157 4825 5271	NlaIII	26				
BsrDI	2	1170 1536	NlaIV	22				
BsrFI	7	433 442 809 2021 2181	NotI	1	166			
		4380 5228	NruI	1	4083			
BssHII	1	1534	NsiI	2	4276 4542			
Bst1107I	1	2995	Nspl	4	598 2569 2861 3228			

Enzymes that do not cut pET28a(+):

AatII	AflII	AgeI	AscI	AvrII
BaeI	BsaI	BseRI	BspMI	BsrGI
Bsu36I	DraI	Eam1105I	FseI	KpnI
MscI	MunI	NspV	Pacl	PmeI
PmlI	PstI	RleAI	RsrII	SacII
Scal	SexAI	SfiI	SnaBI	SpeI
SrfI	Sse8387I	StuI	SunI	Swal