

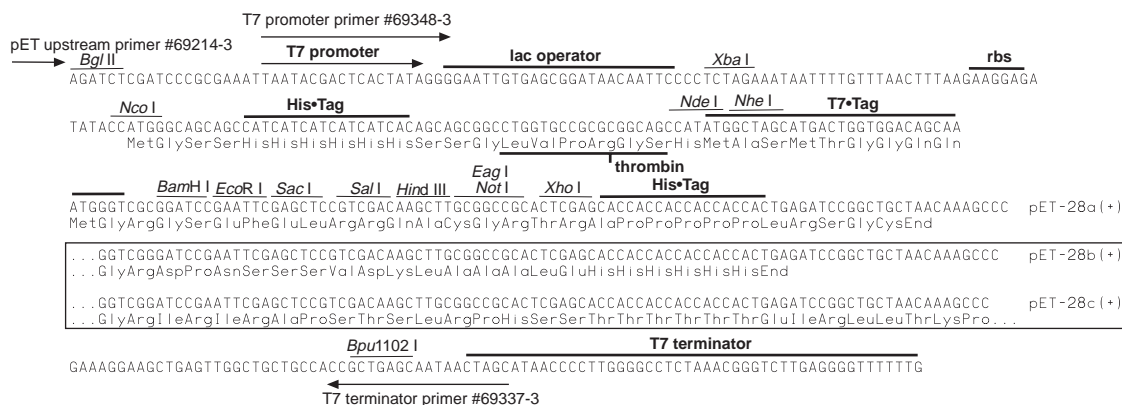
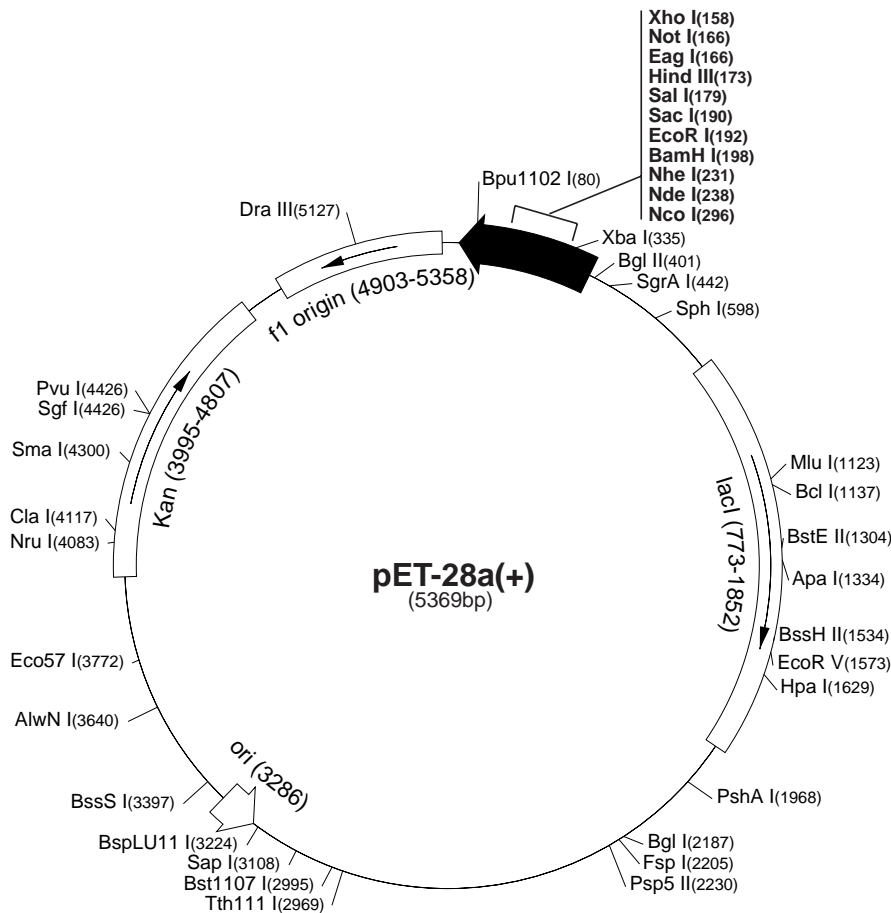
	Cat. No.
pET-28a DNA	69864-3
pET-28b DNA	69865-3
pET-28c DNA	69866-3

The pET-28a-c(+) vectors carry an N-terminal His•Tag<sup>®</sup>/thrombin/T7•Tag<sup>®</sup> 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 ( <i>Bam</i> H I - <i>Xho</i> I)	158-203
His•Tag coding sequence	140-157
T7 terminator	26-72
<i>lacI</i> 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 *Bam*HI at 198. pET-28c(+) is a 5367bp plasmid; subtract 2bp from each site beyond *Bam*HI at 198.



# pET-28a(+) Restriction Sites

TB074 12/98

Enzyme	# Sites	Locations					Enzyme	# Sites	Locations					Enzyme	# Sites	Locations												
AccI	2	180	2994					BstEII	1	1304						Pfi1108I	1	2010										
AccIII	7	890	1618	1949	2733	2874	BstXI	3	925	1054	1177						PfiMI	2	705	4689								
		3176	4967						BstYI	9	132	198	401	687	1899	PleI	9	384	672	759	1555	3118						
AcI	77								2416	3865	3876	4675							3603	4658	5062	5070						
AfIII	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						DdeI	11						RsaI	3	1270	3030	4261									
ApaI	1	1334						DpnI	21						SacI	1	190											
ApaBI	1	807						DraIII	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						DsaI	3	296	560	2196						Sau3AI	21								
AvaII	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						SfiCl	4	369	3489	3680	5346						
		1762	1892	2018	5164		Ecil	3	900	3298	3444						SgfI	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						Sspl	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							
Bcefl	6	642	983	1610	3726	4745	EcoRV	1	1573								5031											
		5153						FauI	17						TfiI	9	1802	2104	2274	2778	3199							
Bcgl	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						Thal	38									
BclI	1	1137						FspI	1	2205						Tsel	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							
Bpml	4	961	1450	2084	2751		Hgal	11								3853	4262	4389										
Bpu10I	2	2330	4443						HgiEI	2	721	3810						UbaJI	21									
Bpu1102I	1	80						HhaI	47						Vspl	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	Hinfl	18						Xmnl	2	2782	4815											
		2196	3384	4297	4298	4699	HpaI	1	1629						Enzymes that do not cut pET28a(+):													
BsaWI	7	2	1442	1945	2413	3430	HphI	16						AatII	AfIII	AgeI	AscI	AvrII										
		3577	4561						Maell	14						Bael	Bsal	BseRI	BspMI	BsrGI								
BsaXI	2	1782	5075						MaellI	16						Bsu36I	DraI	Eam1105I	FseI	KpnI								
Bsbl	2	2940	5034						MbolI	12						MscI	MunI	NspV	PacI	PmeI								
BscGI	11						MluI	1	1123						PmlI	PstI	RleAI	RsrII	SacII									
BsgI	3	974	1174	2384						MmeI	7	3439	3623	4068	4262	4624	Scal	SexAI	Sfil	SnaBI	SpeI							
Bsil	1	3397								4633	5104						SrfI	Sse8387I	StuI	SunI	Swal							
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						MspA1I	9	84	264	1153	1723	1816												
BsmFI	4	584	2125	2495	5342								2815	2934	3566	3811												
BsoFI	48						Mwol	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															
Bsrl	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						Nrul	1	4083																	
BssHII	1	1534						Nsil	2	4276	4542																	
Bst1107I	1	2995						NspI	4	598	2569	2861	3228															