

pET-28a-c(+) Vectors

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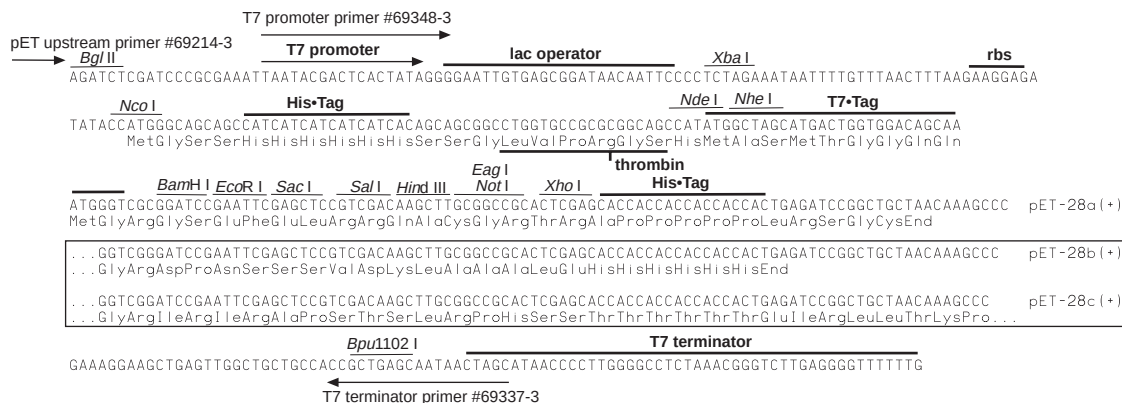
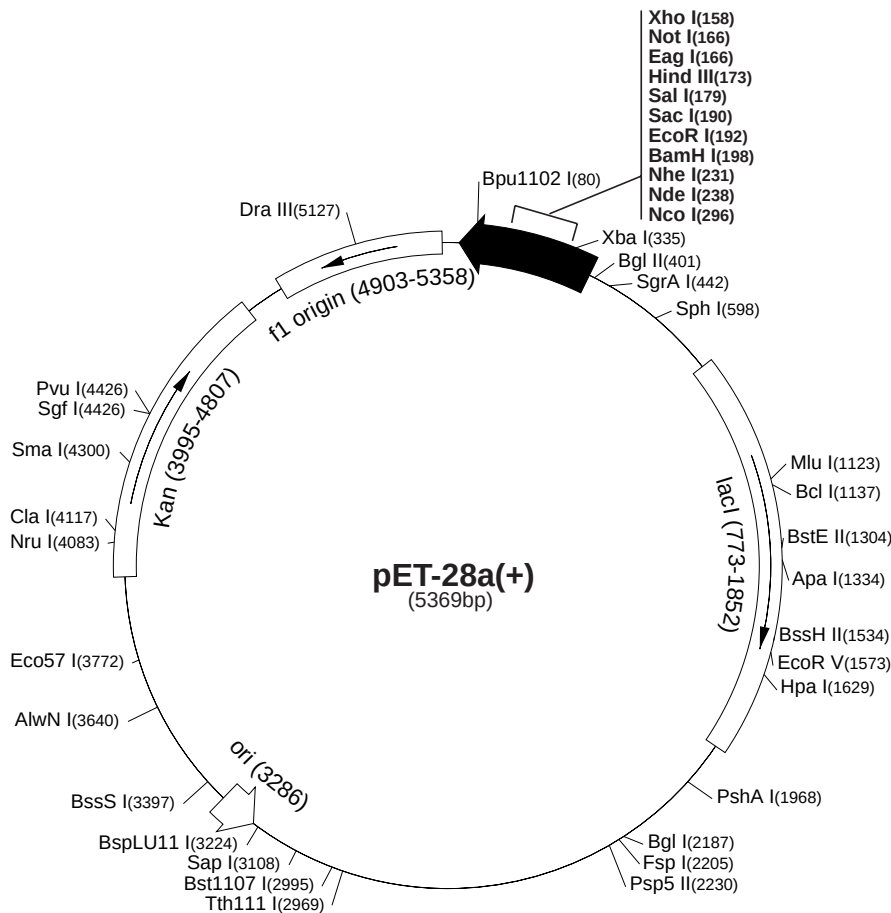
	Cat. No.
pET-28a DNA	69864-3
pET-28b DNA	69865-3
pET-28c DNA	69866-3

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	
(<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*H I at 198. pET-28c(+) is a 5367bp plasmid; subtract 2bp from each site beyond *Bam*H I at 198.



pET-28a(+) Restriction Sites

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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		
									2416	3865	3876	4675			3603	4658	5062	5070		
AcII	77						Cac8I	40						PshAI	1	1968				
AflIII	2	1123	3224				CjeI	26						Psp5II	1	2230				
AluI	22						CjePI	30						Psp1406I	4	785	2153	2549		
AlwI	13						Clal	1	4117					PvuI	1	4426		4912		
Alw21I	7	159	190	623	1107	2218	CviJI	86						PvuII	3	1723	1816	2815		
		3042	3542				CviRI	22						RcaI	3	521	3944	4819		
Alw44I	3	1103	3038	3538			DdeI	11						RsaI	3	1270	3030	4261		
AlwNI	1	3640					DpnI	21						SacI	1	190				
Apal	1	1334					DraIII	1	5127					Sall	1	179				
ApaBI	1	807					DrdI	3	2917	3332	5082			SapI	1	3108				
ApoI	6	192	1398	4039	4223	4929	DrdII	2	846	5132				Sau96I	14					
		4940					Dsal	3	296	560	2196			Sau3AI	21					
AvaI	2	158	4298				EaeI	4	166	431	563	1797		ScrFI	22					
AvaII	5	1675	2051	2139	2230	2509	EagI	1	166					SfaNI	23					
BamHI	1	198					EarI	3	741	3108	4239			SfcI	4	369	3489	3680		
BanI	9	253	445	466	580	1043	Ecil	3	900	3298	3444			Sgfi	1	4426		5346		
		1762	1892	2018	5164		Eco47III	3	528	2029	2478			SgrAI	1	442				
BanII	6	190	507	521	1334	4081	Eco57I	1	3772					Smal	1	4300				
		5202					EcoNI	2	658	4338				SphI	1	598				
BbsI	4	1269	1608	1982	2342		EcoO109I	3	53	556	2230			Sspl	2	4351	4919			
BbvI	27						EcoRI	1	192					StyI	2	57	296			
BccI	14						EcoRII	10	256	846	1161	1701	1758	TaqI	15					
Bce83I	6	21	1937	2107	3315	3613			3250	3371	3384	4314	4671	TaqII	6	1031	1249	1922		
		3854					EcoRV	1	1573							5031		3126		
BceII	6	642	983	1610	3726	4745	FauI	17						TfiI	9	1802	2104	2274		
		5153					FokI	9	1169	1178	2443	2505	2583			4337	4393	2778		
Bcgl	9	160	194	228	1415	1449			2769	2910	4064	4670				4565	4656	3199		
		1949	1983	2801	2835		Fspl	1	2205					Thal	38					
BcII	1	1137					GdiII	4	166	431	563	1797		Tsel	27					
Bfal	7	70	232	336	2238	3719	HaeI	6	851	2172	3239	3250	3702	Tsp45I	7	1304	2132	2663		
		4026	5278						4513							4573	5300	2876		
BglI	1	2187					HaeII	14						Tsp509I	20			2971		
BglII	1	401					HaeIII	24						Tth111I	1	2969				
BmgI	1	1332					HgaI	11						Tth111II	8	962	1655	2685		
BpmI	4	961	1450	2084	2751		HgiEI	2	721	3810						3853	4262	3814		
Bpu10I	2	2330	4443				HhaI	47						UbaJI	21			3821		
Bpu1102I	1	80					Hin4I	3	1022	4112	4654			VspI	5	384	1808	2685		
BsaAI	2	2976	5127				HincII	2	181	1629				XbaI	1	335		4625		
BsaBI	3	400	406	2421			HindIII	1	173					XcmI	3	979	1495	4814		
BsaHI	5	446	467	581	1080	1763	Hinfl	18						XhoI	1	158				
BsaJI	10	57	296	560	566	1758	HpaI	1	1629					Xmni	2	2782	4815			
		2196	3384	4297	4298	4699	HphI	16						Enzymes that do not cut pET28a(+):						
BsaWI	7	2	1442	1945	2413	3430	MaeI	14						AatII	AflII	AgeI	AscI	AvrII		
		3577	4561				MaeII	16						BaeI	Bsal	BseRI	BspMI	BsrGI		
BsaXI	2	1782	5075				MaeIII	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	Stul	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						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								
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				NruI	1	4083											
BssHII	1	1534					Nsil	2	4276	4542										
Bst1107I	1	2995					NspI	4	598	2569	2861	3228								