

pET-28a-c(+) Vectors

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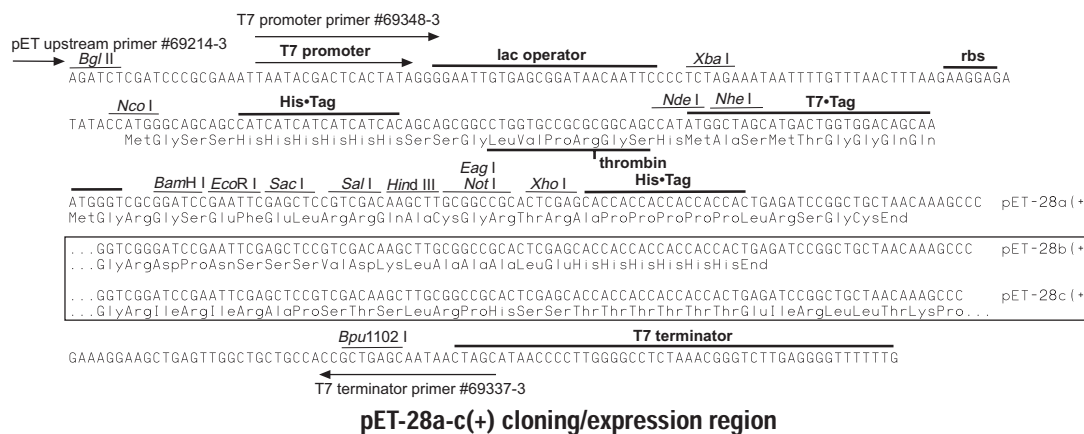
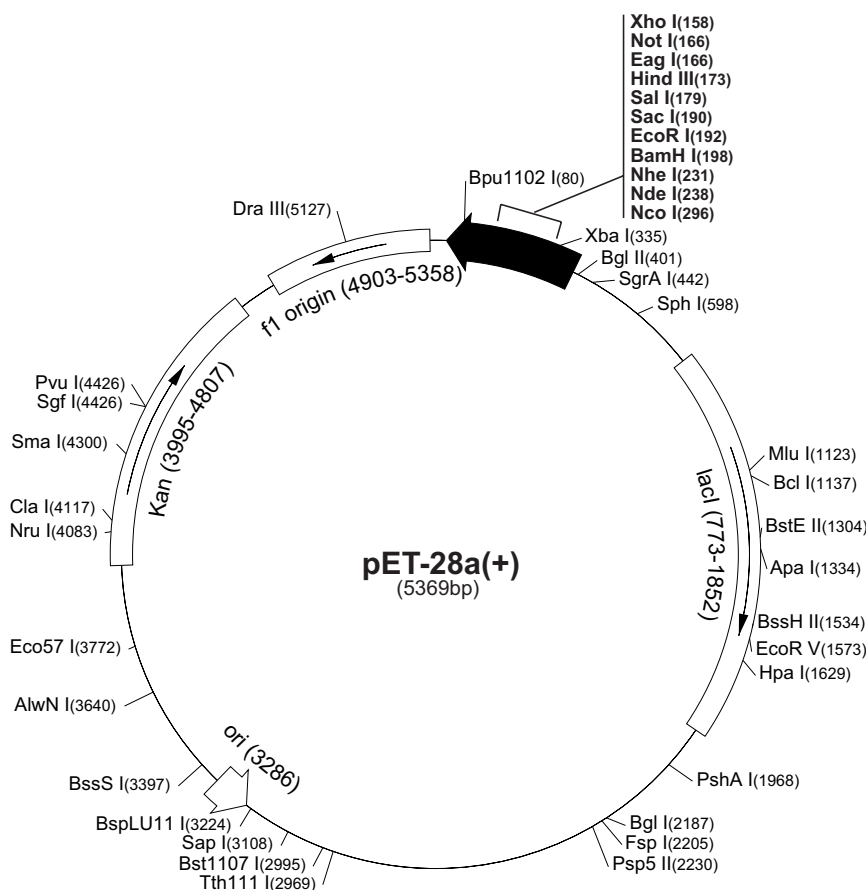
	Cat. No.
pET-28a DNA	69864-3
pET-28b DNA	69865-3
pET-28c DNA	69866-3

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					
AccI	2	180	2994				
AccIII	7	890	1618	1949	2733	2874	
		3176	4967				
Acil	77						
AflIII	2	1123	3224				
AluI	22						
AlwI	13						
Alw21I	7	159	190	623	1107	2218	
		3042	3542				
Alw44I	3	1103	3038	3538			
AlwNI	1	3640					
ApaI	1	1334					
ApaBI	1	807					
ApoI	6	192	1398	4039	4223	4929	
		4940					
AvaI	2	158	4298				
AvaII	5	1675	2051	2139	2230	2509	
BamHI	1	198					
BanI	9	253	445	466	580	1043	
		1762	1892	2018	5164		
BanII	6	190	507	521	1334	4081	
		5202					
BbsI	4	1269	1608	1982	2342		
BbvI	27						
BccI	14						
Bce83I	6	21	1937	2107	3315	3613	
		3854					
BceII	6	642	983	1610	3726	4745	
		5153					
BcgI	9	160	194	228	1415	1449	
		1949	1983	2801	2835		
BclI	1	1137					
BfaI	7	70	232	336	2238	3719	
		4026	5278				
BglI	1	2187					
BglII	1	401					
BmgI	1	1332					
BpmI	4	961	1450	2084	2751		
Bpu10I	2	2330	4443				
Bpu1102I	1	80					
BsaAI	2	2976	5127				
BsaBI	3	400	406	2421			
BsaHI	5	446	467	581	1080	1763	
BsaJI	10	57	296	560	566	1758	
		2196	3384	4297	4298	4699	
BsaWI	7	2	1442	1945	2413	3430	
		3577	4561				
BsaXI	2	1782	5075				
Bsbl	2	2940	5034				
BscGI	11						
BsgI	3	974	1174	2384			
BsII	1	3397					
BsiEI	5	169	1908	3140	3564	4426	
BsII	23						
BsmI	2	4310	4387				
BsmAI	6	820	1225	1351	1738	2865	
		4442					
BsmBI	3	1738	2865	4442			
BsmFI	4	584	2125	2495	5342		
BsoFI	48						
Bsp24I	12						
Bsp1286I	12						
BspEI	2	2	2413				
BspGI	1	2750					
BspLU11I	1	3224					
BsrI	22						
BsrBI	4	356	3157	4825	5271		
BsrDI	2	1170	1536				
BsrFI	7	433	442	809	2021	2181	
		4380	5228				
BssHII	1	1534					
Bst1107I	1	2995					

Enzyme	# Sites	Locations					
BstEII	1	1304					
BstXI	3	925	1054	1177			
BstYI	9	132	198	401	687	1899	
		2416	3865	3876	4675		
Cac8I	40						
CjeI	26						
CjePI	30						
Clal	1	4117					
CviJI	86						
CviRI	22						
DdeI	11						
DpnI	21						
DraIII	1	5127					
DrdI	3	2917	3332	5082			
DrdII	2	846	5132				
Dsal	3	296	560	2196			
EaeI	4	166	431	563	1797		
EagI	1	166					
EarI	3	741	3108	4239			
Ecil	3	900	3298	3444			
Eco47III	3	528	2029	2478			
Eco57I	1	3772					
EcoNI	2	658	4338				
EcoO109I	3	53	556	2230			
EcoRI	1	192					
EcoRII	10	256	846	1161	1701	1758	
		3250	3371	3384	4314	4671	
EcoRV	1	1573					
FauI	17						
FokI	9	1169	1178	2443	2505	2583	
		2769	2910	4064	4670		
FspI	1	2205					
GdiII	4	166	431	563	1797		
HaeI	6	851	2172	3239	3250	3702	
		4513					
HaeII	14						
HaeIII	24						
HgaI	11						
HgiEII	2	721	3810				
HhaI	47						
Hin4I	3	1022	4112	4654			
HincII	2	181	1629				
HindIII	1	173					
Hinfl	18						
HpaI	1	1629					
HphI	16						
Maell	14						
MaellI	16						
MbolI	12						
MluI	1	1123					
MmeI	7	3439	3623	4068	4262	4624	
		4633	5104				
MnII	25						
MseI	25						
MslI	6	1175	1463	1493	2211	2406	
		2797					
MspI	29						
MspA1I	9	84	264	1153	1723	1816	
		2815	2934	3566	3811		
MwoI	39						
NarI	4	446	467	581	1763		
NciI	12						
NcoI	1	296					
NdeI	1	238					
NgoAIV	4	433	2021	2181	5228		
NheI	1	231					
NlaIII	26						
NlaIV	22						
NotI	1	166					
NruI	1	4083					
NsiI	2	4276	4542				
NspI	4	598	2569	2861	3228		

Enzyme	# Sites	Locations					
Pfi1108I	1	2010					
PfiMI	2	705	4689				
PleI	9	384	672	759	1555	3118	
		3603	4658	5062	5070		
PshAI	1	1968					
Psp5II	1	2230					
Psp1406I	4	785	2153	2549	4912		
PvuI	1	4426					
PvuII	3	1723	1816	2815			
RcaI	3	521	3944	4819			
RsaI	3	1270	3030	4261			
SacI	1	190					
Sall	1	179					
SapI	1	3108					
Sau96I	14						
Sau3AI	21						
ScrFI	22						
SfaNI	23						
SfcI	4	369	3489	3680	5346		
SgfI	1	4426					
SgrAI	1	442					
SmaI	1	4300					
SphI	1	598					
SspI	2	4351	4919				
StyI	2	57	296				
TaqI	15						
TaqII	6	1031	1249	1922	3126	4680	
		5031					
TfiI	9	1802	2104	2274	2778	3199	
		4337	4393	4565	4656		
Thal	38						
TseI	27						
Tsp45I	7	1304	2132	2663	2876	2971	
		4573	5300				
Tsp509I	20						
Tth111I	1	2969					
Tth111II	8	962	1655	2685	3814	3821	
		3853	4262	4389			
UbaJI	21						
VspI	5	384	1808	1867	4625	4814	
XbaI	1	335					
XcmI	3	979	1495	1513			
XhoI	1	158					
XmnI	2	2782	4815				

Enzymes that do not cut pET28a(+):

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