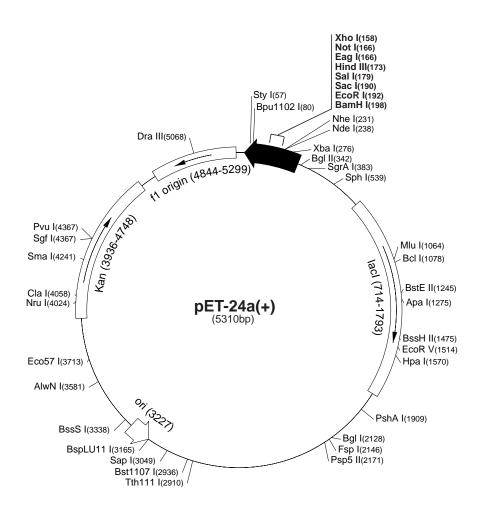
## pET-24a-d(+) Vectors

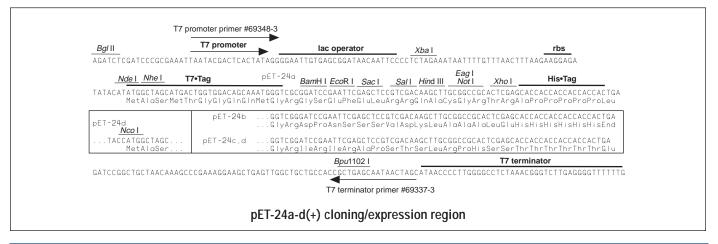
	Cat. No.
pET-24a DNA	69749-3
pET-24b DNA	69750-3
pET-24c DNA	69751-3
pET-24d DNA	69752-3

The pET-24a-d(+) vectors carry an N-terminal T7 $^{\circ}$ Tag $^{\circ}$  sequence plus an optional C-terminal His $^{\circ}$ Tag $^{\circ}$  sequence. These vectors differ from pET-21a-d(+) only by their selectable marker (kanamycin vs. ampicillin resistance). 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-24a(+) sequence landmarks	
T7 promoter	311-327
T7 transcription start	310
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	714-1793
pBR322 origin	3227
Kan coding sequence	3936-4748
f1 origin	4844-5299

The maps for pET-24b(+), pET-24c(+) and pET-24d(+) are the same as pET-24a(+) (shown) with the following exceptions: pET-24b(+) is a 5309bp plasmid; subtract 1bp from each site beyond BamH I at 198. pET-24c(+) is a 5308bp plasmid; subtract 2bp from each site beyond BamH I at 198. pET-24d(+) is a 5307bp plasmid; the BamH I site is in the same reading frame as in pET-24c(+). An Nco I site is substituted for the Nde I site with a net 1bp deletion at position 238 of pET-24c(+). As a result, Nco I cuts pET24d(+) at 234, and Nhe I cuts at 229. For the rest of the sites, subtract 3bp from each site beyond position 239 in pET-24a(+). Nde I does not cut pET-24d(+). Note also that Sty I is not unique in pET-24d(+).







## pET-24a(+) Restriction Sites

Enzyme	# Sites	Locati	ions				Enzyme #	# Sites	Locations				Enzyme	# Sites	Locations					
Accl	2	180	2935				BstEII	1	1245					PfIMI	2	646	4630			
AcellI	7	831 3117	1559 4908	1890	2674	2815	BstXI BstYI	3	866 132	995 198	1118 342	628	1840	Plel	9	325 3544	613 4599	700 5003	1496 5011	3059
Acil	74								2357	3806	3817	4616		PshAl	1	1909				
AfIIII	2	1064	3165				Cac8I	40						Psp5II	1	2171				
Alul	22						Cjel	26						Psp1406I	4	726	2094	2490	4853	
Alwl	13						CjePI	20						Pvul	1	4367				
Alw21I	7	159	190	564	1048	2159	Clal	1	4058					Pvull	3	1664	1757	2756		
		2983	3483				CviJI	83						Rcal	3	462	3885	4760		
Alw44I	3	1044	2979	3479			CviRI	22						Rsal	3	1211	2971	4202		
AlwNI	1	3581					Ddel	11						Sacl	1	190				
Apal	1	1275					DpnI	21						Sall	1	179				
ApaBI	1	748					Dralll	1	5068					Sapl	1	3049				
Apol	6	192	1339	3980	4164	4870	Drdl	3	2858	3273	5023			Sau96l	14					
A I	2	4881	4220				Drdll	2	787	5073				Sau3Al	21					
Aval	2 5	158	4239	2000	2171	2450	Dsal	2	501	2137	EO4	1720		ScrFI	21					
Avall	5 1	1616	1992	2080	2171	2450	Eael	4	166	372	504	1738		SfaNI	23	210	2420	2421	E207	
BamHI BanI	8	198 386	407	521	984	1703	Eagl Earl	1 3	166 682	3049	4180			Sfcl Sgfl	4 1	310 4367	3430	3621	5287	
Daili	0	1833	1959	5105	704	1703	Ecil	3	841	3239	3385			SgrAl	1	383				
Banll	6	190	448	462	1275	4022	Eco47III	3	469	1970	2419			Smal	1	4241				
Dariii	U	5143	440	402	1275	4022	Eco57I	1	3713	3713	2417			Sphl	1	539				
Bbsl	4	1210	1549	1923	2283		EcoNI	2	599	4279				Sspl	2	4292	4860			
Bbvl	23	1210	1017	.,20	2200		EcoO109I		53	497	2171			Styl	1	57	1000			
Bccl	13						EcoRI	1	192					Taql	15					
Bce83I	6	21	1878	2048	3256	3554	EcoRII	9	787	1102	1642	1699	3191	TaqII	6	972	1190	1863	3067	4621
		3795							3312	3325	4255	4612				4972				
Bcefl	6	583	924	1551	3667	4686	EcoRV	1	1514					Tfil	9	1743	2045	2215	2719	3140
		5094					Faul	17								4278	4334	4506	4597	
Bcgl	9	160	194	228	1356	1390	Fokl	9	1110	1119	2384	2446	2524	Thal	36					
		1890	1924	2742	2776				2710	2851	4005	4611		Tsel	23					
BcII	1	1078					Fspl	1	2146					Tsp45I	7	1245	2073	2604	2817	2912
Bfal	7	70	232	277	2179	3660	Gdill	4	166	372	504	1738				4514	5241			
		3967	5219				Hael	6	792	2113	3180	3191	3643	Tsp509I	20					
Bgll	1	2128							4454					Tth1111	1	2910				
BgIII	1	342					Haell	14						Tth111II	8	903	1596	2626	3755	3762
Bmgl	1	1273					HaeIII	23								3794	4203	4330		
Bpml	4	902	1391	2025	2692		Hgal	11		0754				UbaJI	18	005	4740	4000		
Bpu10I	2	2271	4384				HgiEll	2	662	3751				Vspl	5	325	1749	1808	4566	4755
Bpu1102I	1	80	F0/0				Hhal	46	0/0	4050	4505			Xbal	1	276	1.407	4.45.4		
BsaAl	2	2917	5068	22/2			Hin4l	3	963	4053	4595			Xcml	3	920	1436	1454		
BsaBI BsaHI	3 5	341 387	347 408	2362 522	1021	1704	HincII HindIII	2 1	181 173	1570				Xhol Xmnl	1 2	158 2723	4756			
BsaJI	9	57	501	507	1699	2137	Hinfl	18	1/3					AIIIII	2	2123	4730			
DSaJI	7	3325	4238	4239	4640	2137	Hpal	1	1570					Enzymes th	nat do not	cut nET.	2/2(+).			
BsaWI	7	2	1383	1886	2354	3371	HphI	16	1370					Aatll	AfIII	Age		Ascl	AvrII	
Doawn	•	3518	4502	.000	200 1	0071	Maell	14						Bael	Bsal	Bsel		BspMI	BsrGl	
BsaXI	2	1723	5016				MaeIII	16						Bsu36l	Dral		11051		Kpnl	
Bsbl	2	2881	4975				Mboll	12						Mscl	Munl	Nco		NspV	Pacl	
BscGI	11						Mlul	1	1064					Pmel	PmII	Pstl		RleAl	RsrII	
Bsgl	3	915	1115	2325			Mmel	7	3380	3564	4009	4203	4565	SacII	Scal	Sex	41	Sfil	SnaBl	
Bsil	1	3338							4574	5045				Spel	Srfl	Sse	33871	Stul	Sunl	
BsiEl	5	169	1849	3081	3505	4367	MnII	25						Swal						
BsII	23						Msel	25												
Bsml	2	4251	4328				MsII	6	1116	1404	1434	2152	2347							
BsmAl	6	761	1166	1292	1679	2806			2738											
	_	4383					Mspl	29	_											
BsmBl	3	1679	2806	4383			MspA1I	8	84	1094	1664	1757	2756							
BsmFl	4	525	2066	2436	5283			20	2875	3507	3752									
BsoFI	41						Mwol	39	207	400	Egg	1704								
Bsp241	12						Narl	4	387	408	522	1704								
Bsp1286l	12	2	22E 4				Ncil Ndel	12 1	220											
BspEI BspGI	2 1	2 2691	2354				NgoAIV	1	238 374	1962	2122	5169								
BspGI BspLU11I		3165					Nhel	4 1	231	1702	2122	0109								
Bsrl	22	2100					NIaIII	25	ZJ I											
BsrBI	4	297	3098	4766	5212		NlaIV	21												
BsrDI	2	1111	3096 1477	7/00	JZIZ		Notl	1	166											
BsrFI	7	374	383	750	1962	2122	Nrul	1	4024											
2311	*	4321	5169	, 50	1702	£14£	Nsil	2	4024	4483										
BssHII	1	1475	0.07				Nspl	4	539	2510	2802	3169								
														1						
Bst1107I	1	2936					Pfl1108I	1	1951					l						