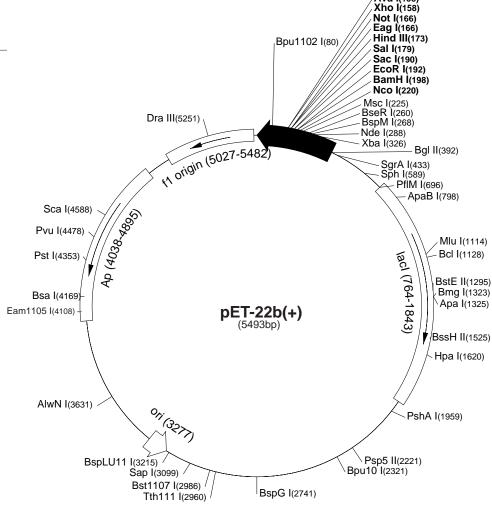
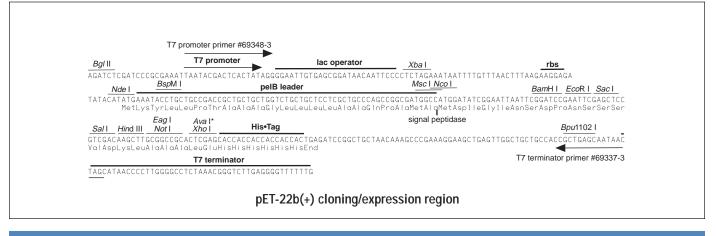
pET-22b(+) Vector

The pET-22b(+) vector (Cat. No. 69744-3) carries an N-terminal *pelB* signal sequence for potential periplasmic localization, plus 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-22b(+) sequence landmarks	
T7 promoter	361-377
T7 transcription start	360
pelB coding sequence	224-289
Multiple cloning sites	
(Nco I - Xho I)	158-225
His • Tag coding sequence	140-157
T7 terminator	26-72
lacI coding sequence	764-1843
pBR322 origin	3277
bla coding sequence	4038-4895
f1 origin	5027-5482





## pET-22b(+) Restriction Sites

Enzyme	# Sites						Enzyme	# Sites						Enzyme	# Sites		ions			
Accl	2	180	2985				BsrFI	8	231	424	433	800	2012	Notl	1	166				
AceIII	8	881	1609	1940	2724	2865			2172	4188	5352			Nspl	4	589	2560	2852	3219	
A . 11	04	3167	4407	5091			BssHII	1	1525					Pfl1108I	2	2001	4126			
Acil	81	1111	2215				Bst1107I	1	2986					PfIMI	1	696	//2	750	15.47	2100
AfIIII Alul	2 25	1114	3215				BstEII BstXI	1	1295 916	10/15	1140			Plel	9	375	663 4097	750 5186	1546 5194	3109
Alwl	16						BstYI	3 12	910	1045	1168			PshAl	1	3594 1959	4097	3100	3194	
Alw21I	9	159	190	614	1098	2209	Cac8I	39						Psp5II	1	2221				
MIWZ II	7	3033	3533	4694	4779	2207	Cjel	24						Psp1406l		776	2144	2540	4334	4707
Alw44I	4	1094	3029	3529	4775		CjePI	18						1 3014001	O	5036	2177	2540	7007	7707
AlwNI	1	3631	0027	0027	.,,,		CviJI	87						Pstl	1	4353				
Apal	1	1325					CviRI	24						Pvul	1	4478				
ApaBI	1	798					Ddel	11						Pvull	3	1714	1807	2806		
Apol .	4	192	1389	5053	5064		DpnI	27						Rcal	3	512	3935	4943		
Aval	1	158					Dral	3	3974	3993	4685			Rsal	3	1261	3021	4588		
Avall	7	1666	2042	2130	2221	2500	Dralll	1	5251					Sacl	1	190				
		4246	4468				Drdl	3	2908	3323	5206			Sall	1	179				
BamHI	1	198					DrdII	2	837	5256				Sapl	1	3099				
Banl	9	436	457	571	1034	1753	Dsal	3	220	551	2187			Sau96l	18					
		1883	2009	4056	5288		Eael	6	166	223	422	554	1788	Sau3Al	27					
Banll	5	190	498	512	1325	5326			4496					Scal	1	4588				
Bbsl	4	1260	1599	1973	2333		Eagl	1	166					ScrFI	19					
Bbvl	31						Eam11051		4108	2022	4000			SfaNI	20	246	0.405	0/74	40.10	F 470
Bccl	14	0.1	1000	2000	2201	2/0/	Earl	3	732	3099	4903	4070		Sfcl	5	360	3480	3671	4349	5470
Bce83I	7	21	1928	2098	3306	3604	Ecil	4	891	3289	3435	4263		SgrAl	1	433				
Doof	E	3845	4713	1/01	2717	E277	Eco47III	3	519	2020	2469			Sphl	1	589	E042			
Bcefl	5 10	633 160	974 194	1601 1406	3717 1440	5277 1940	Eco57I EcoNI	2 1	3763 649	4775				Sspl Styl	2	4912 57	5043 220			
Bcgl	10	1974	2792	2826	4613	4647	EcoO1091		53	547	2221			Tagl	13	37	220			
BcII	1	1128	2172	2020	4013	4047	EcoRI	1	192	347	2221			Taql	9	1022	1240	1913	3117	4456
Bfal	7	70	327	2229	3710	3963	EcoRII	7	837	1152	1692	1749	3241	Taqii	7	4641	4794	4811	5155	4430
Diai	,	4298	5402	2221	3710	3703	LCOIGH	,	3362	3375	1072	1777	3241	Tfil	5	1793	2095	2265	2769	3190
Bgll	3	237	2178	4228			EcoRV	2	217	1564				Thal	34	1770	2070	2200	2107	0170
BgIII	1	392	2170	ILLO			Faul	17		1001				Tsel	31					
Bmgl	1	1323					Fokl	10	1160	1169	2434	2496	2574	Tsp45I	8	1295	2123	2654	2867	2962
Bpml	5	952	1441	2075	2742	4178			2760	2901	4074	4255	4542	'		4364	4575	5424		
Bpu10I	1	2321					Fspl	2	2196	4330				Tsp509I	18					
Bpu1102I	1	80					Gdill	5	166	422	554	1788	4496	Tth111I	1	2960				
Bsal	1	4169					Hael	6	225	842	2163	3230	3241	Tth111II	6	953	1646	2676	3805	3812
BsaAl	2	2967	5251						3693							3844				
BsaBI	3	391	397	2412			Haell	14						UbaJI	20					
BsaHl	6	437	458	572	1071	1754	HaeIII	25						VspI	5	207	375	1799	1858	4280
		4645					Hgal	12						Xbal	1	326				
BsaJI	7	57	220	551	557	1749	HgiEll	2	712	3801				Xcml	3	970	1486	1504		
	_	2187	3375				Hhal	45						Xhol	1	158				
BsaWl	7	2	1433	1936	2404	3421	Hin4l	3	1013	4107	4181			XmnI	3	208	2773	4707		
D. VI	0	3568	4399				HincII	2	181	1620							001 ( )			
BsaXI	2	1773	5199				HindIII	1	173					Enzymes th				A col	Avell	
Bsbl BscGl	2 13	2931	5158				Hinfl	14 1	1420					AatII Bael	AfIII	Agel Bsr@		Ascl Bsu36l	AvrII Clal	
BseRI	13	260					Hpal Hphl	16	1620					Fsel	Bsml Kpnl	Mun		Nhel	Nrul	
Bsgl	3	965	1165	2375			Maell	15						Nsil	NspV	Pacl		Pmel	PmII	
Bsil	2	3388	4772	2373			MaeIII	18						RleAl	RsrII	Sacl		SexAl	Sfil	
BsiEl	7	169	271	1899	3131	3555	Mboll	14						Sgfl	Smal	Snaf		Spel	Srfl	
DSILI	,	4478	4627	1077	3131	5555	Mlul	1	1114					Sse83871	Stul	Sunl		Swal	5111	
BsII	20	1170	1027				Mmel	3	3430	3614	5228			05555571	Otal	ou		oma.		
BsmAl	7	811	1216	1342	1729	2856	MnII	27												
		4169	4945				Mscl	1	225											
BsmBl	2	1729	2856				Msel	29												
BsmFl	4	575	2116	2486	5466		MsII	9	1166	1454	1484	2202	2397							
BsoFI	51								2788	4360	4519	4878								
Bsp24I	10	404	436	955	987	1257	Mspl	32												
-		1289	3708	3740	3886	3918	MspA1I	10	84	267	1144	1714	1807							
Bsp1286I	13								2806	2925	3557	3802	4743							
BspEI	2	2	2404				Mwol	39												
BspGI	1	2741					Narl	4	437	458	572	1754								
BspLU11I	1	3215					Ncil	12												
BspMI	1	268					Ncol	1	220											
Bsrl	25						Ndel	1	288											
BsrBI	4	347	3148	4949	5395		NgoAIV	5	231	424	2012	2172	5352							
BsrDI	4	1161	1527	4169	4343		NIaIII	25												
DSLDI							NIaIV	25												