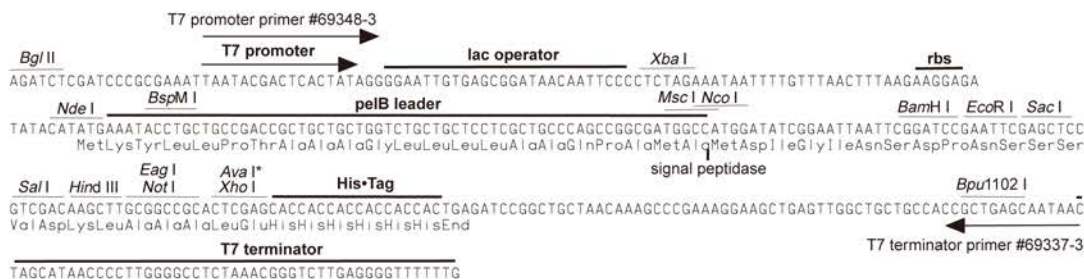
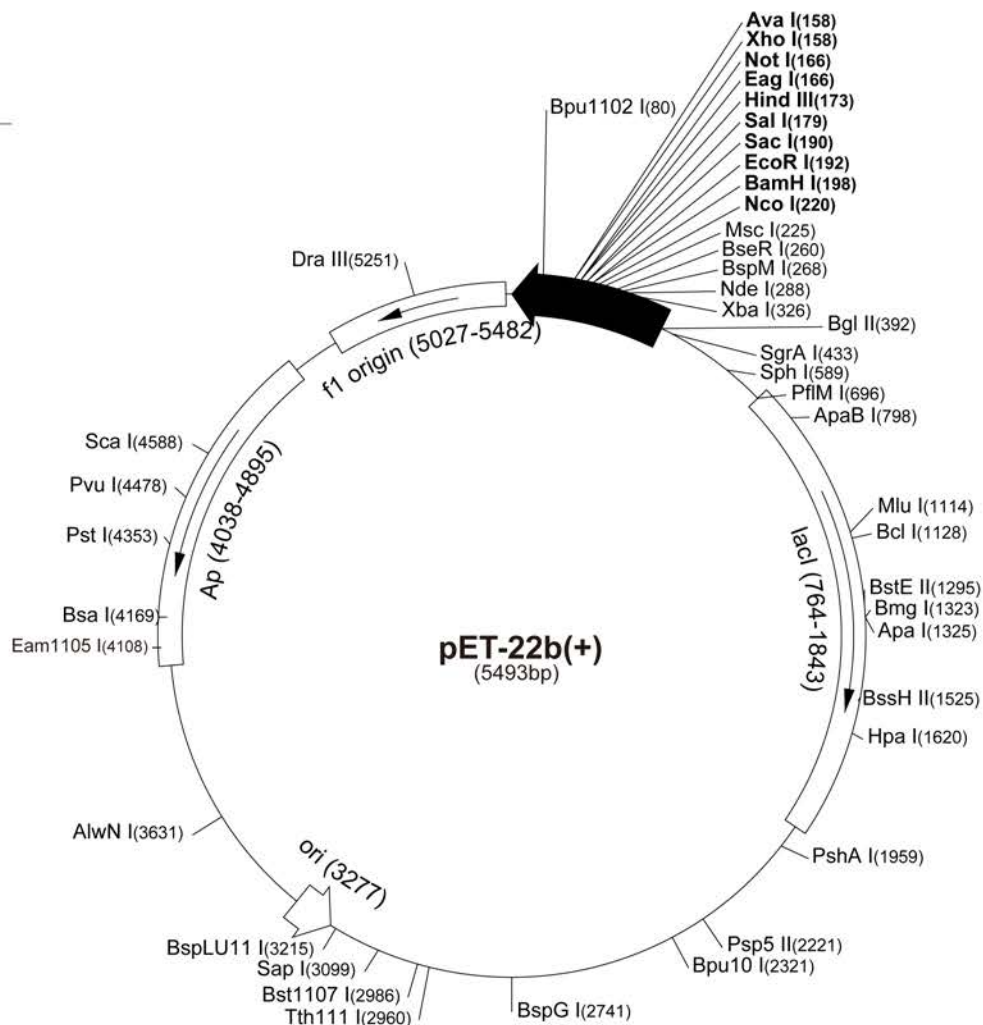


pET-22b(+) Vector

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
<i>pelB</i> coding sequence	224-289
Multiple cloning sites	
(<i>Nco</i> I - <i>Xho</i> I)	158-225
His•Tag coding sequence	140-157
T7 terminator	26-72
<i>lacI</i> coding sequence	764-1843
pBR322 origin	3277
<i>bla</i> coding sequence	4038-4895
f1 origin	5027-5482



pET-22b(+) cloning/expression region

pET-22b(+) Restriction Sites

Enzyme	# Sites	Locations					Enzyme	# Sites	Locations					Enzyme	# Sites	Locations					
AccI	2	180	2985				BsrFI	8	231	424	433	800	2012	NotI	1	166					
AccIII	8	881	1609	1940	2724	2865			2172	4188	5352			NspI	4	589	2560	2852	3219		
		3167	4407	5091			BssHII	1	1525					PII1108I	2	2001	4126				
Acil	81						Bst1107I	1	2986					PIIMI	1	696					
AfIII	2	1114	3215				BstEII	1	1295					PleI	9	375	663	750	1546	3109	
AluI	25						BstXI	3	916	1045	1168					3594	4097	5186	5194		
AlwI	16						BstYI	12						PshAI	1	1959					
Alw21I	9	159	190	614	1098	2209	Cac8I	39						Psp5II	1	2221					
		3033	3533	4694	4779		CjeI	24						Psp1406I	6	776	2144	2540	4334	4707	
Alw44I	4	1094	3029	3529	4775		CjePI	18								5036					
AlwNI	1	3631					CviJI	87						PstI	1	4353					
Apal	1	1325					CviRI	24						PvuI	1	4478					
ApaBI	1	798					DdeI	11						PvuII	3	1714	1807	2806			
ApoI	4	192	1389	5053	5064		DpnI	27						RcaI	3	512	3935	4943			
Aval	1	158					DraI	3	3974	3993	4685			RsaI	3	1261	3021	4588			
Avall	7	1666	2042	2130	2221	2500	DraIII	1	5251					SacI	1	190					
		4246	4468				DrdI	3	2908	3323	5206			Sall	1	179					
BamHI	1	198					DrdII	2	837	5256				SapI	1	3099					
BanI	9	436	457	571	1034	1753	Dsal	3	220	551	2187			Sau96I	18						
		1883	2009	4056	5288		EaeI	6	166	223	422	554	1788	Sau3AI	27						
BanII	5	190	498	512	1325	5326			4496					Scal	1	4588					
BbsI	4	1260	1599	1973	2333		EagI	1	166					ScrFI	19						
BbvI	31						Eam1105I	1	4108					StaNi	20						
BccI	14						EarI	3	732	3099	4903			Sfcl	5	360	3480	3671	4349	5470	
Bce83I	7	21	1928	2098	3306	3604	Ecil	4	891	3289	3435	4263		SgrAI	1	433					
		3845	4713				Eco47III	3	519	2020	2469			SphI	1	589					
BceII	5	633	974	1601	3717	5277	Eco57I	2	3763	4775				SspI	2	4912	5043				
Bcgl	10	160	194	1406	1440	1940	EcoNI	1	649					StyI	2	57	220				
		1974	2792	2826	4613	4647	EcoO109I	3	53	547	2221			TaqI	13						
BclI	1	1128					EcoRI	1	192					TaqII	9	1022	1240	1913	3117	4456	
Bfal	7	70	327	2229	3710	3963	EcoRII	7	837	1152	1692	1749	3241			4641	4794	4811	5155		
		4298	5402						3362	3375						1793	2095	2265	2769	3190	
BgII	3	237	2178	4228			EcoRV	2	217	1564				TfiI	5						
BgIII	1	392					FauI	17						ThaI	34						
BmgI	1	1323					FokI	10	1160	1169	2434	2496	2574	TseI	31						
BpmI	5	952	1441	2075	2742	4178			2760	2901	4074	4255	4542	Tsp45I	8	1295	2123	2654	2867	2962	
Bpu10I	1	2321					FspI	2	2196	4330						4364	4575	5424			
Bpu1102I	1	80					GdiII	5	166	422	554	1788	4496	Tsp509I	18						
BsaI	1	4169					HaeI	6	225	842	2163	3230	3241	Tth111I	1	2960					
BsaAI	2	2967	5251						3693					Tth111II	6	953	1646	2676	3805	3812	
BsaBI	3	391	397	2412			HaeII	14								3844					
BsaHI	6	437	458	572	1071	1754	HaeIII	25						UbaII	20						
		4645					HgaI	12						VspI	5	207	375	1799	1858	4280	
BsaJI	7	57	220	551	557	1749	HgiEII	2	712	3801				XbaI	1	326					
		2187	3375				HhaI	45						XcmI	3	970	1486	1504			
BsaWI	7	2	1433	1936	2404	3421	Hin4I	3	1013	4107	4181			XhoI	1	158					
		3568	4399				HincII	2	181	1620				XmnI	3	208	2773	4707			
BsaXI	2	1773	5199				HindIII	1	173					Enzymes that do not cut pET-22b(+):							
Bsbl	2	2931	5158				HinfI	14						AatII	AfIII	AgeI	AscI	AvrII			
BscGI	13						HpaI	1	1620					BaeI	BsmI	BsrGI	Bsu36I	Clal			
BseRI	1	260					HphI	16						FseI	KpnI	MunI	NheI	NruI			
BsgI	3	965	1165	2375			Maell	15						Nsil	NspV	PacI	PmeI	PmlI			
Bsil	2	3388	4772				MaellI	18						RleAI	RsrII	SacII	SexAI	Sfil			
BsiEI	7	169	271	1899	3131	3555	MbolI	14						Sgfl	SmaI	SnaBI	SpeI	SrfI			
		4478	4627				MluI	1	1114					Sse8387I	StuI	SunI	Swal				
BsII	20						MmeI	3	3430	3614	5228										
BsmAI	7	811	1216	1342	1729	2856	MnII	27													
		4169	4945				MscI	1	225												
BsmBI	2	1729	2856				MseI	29													
BsmFI	4	575	2116	2486	5466		MslI	9	1166	1454	1484	2202	2397								
BsoFI	51								2788	4360	4519	4878									
Bsp24I	10	404	436	955	987	1257	MspI	32													
		1289	3708	3740	3886	3918	MspA1I	10	84	267	1144	1714	1807								
									2806	2925	3557	3802	4743								
Bsp1286I	13						Mwol	39													
BspEI	2	2	2404				NarI	4	437	458	572	1754									
BspGI	1	2741					NciI	12													
BspLU11I	1	3215					NcoI	1	220												
BspMI	1	268					NdeI	1	288												
Bsrl	25						NgoAIV	5	231	424	2012	2172	5352								
BsrBI	4	347	3148	4949	5395		NlaIII	25													
BsrDI	4	1161	1527	4169	4343		NlaIV	25													