pET-22b(+) Vector

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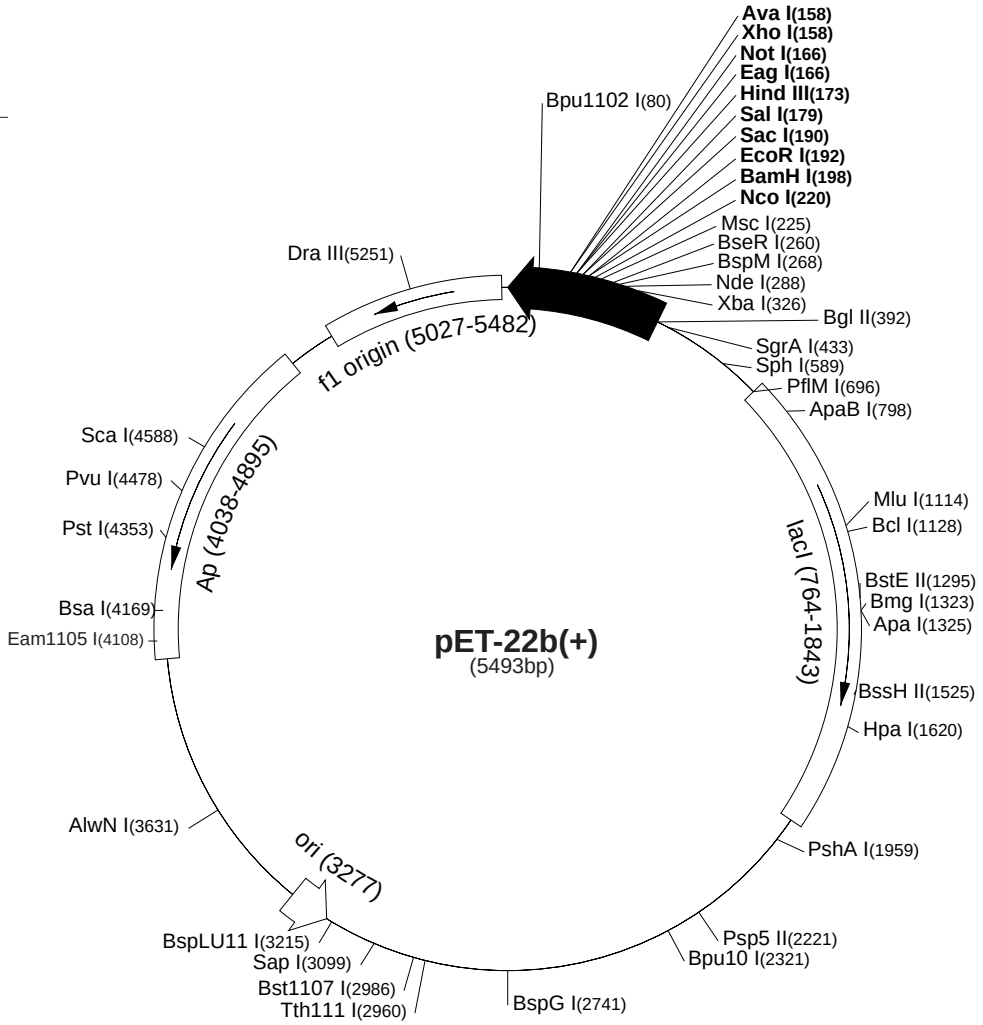
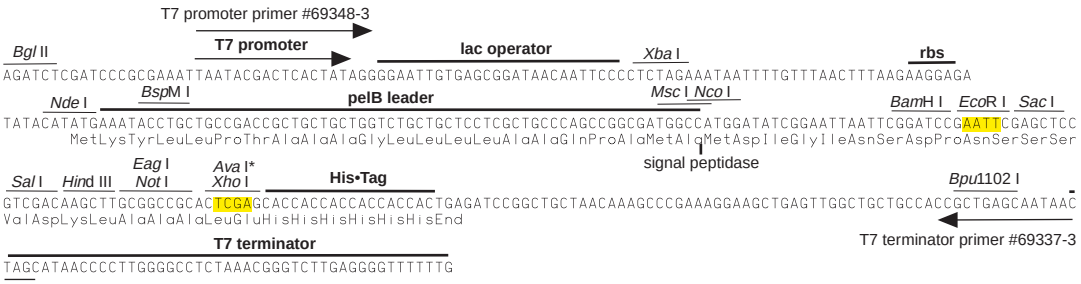
The pET-22b(+) vector (Cat. No. 69744-3) carries an N-terminal *pelB* signal sequence for potential periplasmic localization, plus optional C-terminal His•Tag® sequence. Unique sites are shown on the circle map. Note that the sequence is numbered by the pBR322 convention, so the T7 expression region 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(+) cloning/expression region

pET-22b(+) Restriction Sites

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Enzyme	# Sites	Locations				
AccI	2	180	2985			
AceIII	8	881	1609	1940	2724	2865
		3167	4407	5091		
AciI	81					
AflIII	2	1114	3215			
AluI	25					
AlwI	16					
Alw21I	9	159	190	614	1098	2209
		3033	3533	4694	4779	
Alw44I	4	1094	3029	3529	4775	
AlwNI	1	3631				
ApaI	1	1325				
ApaBI	1	798				
ApoI	4	192	1389	5053	5064	
AvaI	1	158				
AvaII	7	1666	2042	2130	2221	2500
		4246	4468			
BamHI	1	198				
BanI	9	436	457	571	1034	1753
		1883	2009	4056	5288	
BanII	5	190	498	512	1325	5326
BbsI	4	1260	1599	1973	2333	
BbvI	31					
BccI	14					
Bce83I	7	21	1928	2098	3306	3604
		3845	4713			
BcefI	5	633	974	1601	3717	5277
BcgI	10	160	194	1406	1440	1940
		1974	2792	2826	4613	4647
BclI	1	1128				
BfaI	7	70	327	2229	3710	3963
		4298	5402			
BglI	3	237	2178	4228		
BglII	1	392				
BmgI	1	1323				
BpmI	5	952	1441	2075	2742	4178
Bpu10I	1	2321				
Bpu1102I	1	80				
BsaI	1	4169				
BsaAI	2	2967	5251			
BsaBI	3	391	397	2412		
BsaHI	6	437	458	572	1071	1754
		4645				
BsaJI	7	57	220	551	557	1749
		2187	3375			
BsaWI	7	2	1433	1936	2404	3421
		3568	4399			
BsaXI	2	1773	5199			
BsbI	2	2931	5158			
BscGI	13					
BseRI	1	260				
BsgI	3	965	1165	2375		
BsiI	2	3388	4772			
BsiEI	7	169	271	1899	3131	3555
		4478	4627			
BsII	20					
BsmAI	7	811	1216	1342	1729	2856
		4169	4945			
BsmBI	2	1729	2856			
BsmFI	4	575	2116	2486	5466	
BsoFI	51					
Bsp24I	10	404	436	955	987	1257
		1289	3708	3740	3886	3918
Bsp1286I	13					
BspEI	2	2	2404			
BspGI	1	2741				
BspLU11I	1	3215				
BspMI	1	268				
BsrI	25					
BsrBI	4	347	3148	4949	5395	
BsrDI	4	1161	1527	4169	4343	

Enzyme	# Sites	Locations				
BsrFI	8	231	424	433	800	2012
		2172	4188	5352		
BssHII	1	1525				
Bst1107I	1	2986				
BstEII	1	1295				
BstXI	3	916	1045	1168		
BstYI	12					
Cac8I	39					
CjeI	24					
CjePI	18					
CviJI	87					
CviRI	24					
DdeI	11					
DpnI	27					
DraI	3	3974	3993	4685		
DraIII	1	5251				
DrdI	3	2908	3323	5206		
DrdII	2	837	5256			
DsaI	3	220	551	2187		
EaeI	6	166	223	422	554	1788
		4496				
EagI	1	166				
Eam1105I	1	4108				
EarI	3	732	3099	4903		
EciI	4	891	3289	3435	4263	
Eco47III	3	519	2020	2469		
Eco57I	2	3763	4775			
EcoNI	1	649				
EcoO109I	3	53	547	2221		
EcoRI	1	192				
EcoRII	7	837	1152	1692	1749	3241
		3362	3375			
EcoRV	2	217	1564			
FauI	17					
FokI	10	1160	1169	2434	2496	2574
		2760	2901	4074	4255	4542
FspI	2	2196	4330			
GdiII	5	166	422	554	1788	4496
HaeI	6	225	842	2163	3230	3241
		3693				
HaeII	14					
HaeIII	25					
HgaI	12					
HgiEII	2	712	3801			
HhaI	45					
Hin4I	3	1013	4107	4181		
HincII	2	181	1620			
HindIII	1	173				
HinfI	14					
HpaI	1	1620				
HphI	16					
MaeII	15					
MaeIII	18					
MboII	14					
MluI	1	1114				
MmeI	3	3430	3614	5228		
MnlI	27					
MscI	1	225				
MseI	29					
MslI	9	1166	1454	1484	2202	2397
		2788	4360	4519	4878	
MspI	32					
MspA1I	10	84	267	1144	1714	1807
		2806	2925	3557	3802	4743
MwoI	39					
NarI	4	437	458	572	1754	
NciI	12					
NcoI	1	220				
NdeI	1	288				
NgoAIV	5	231	424	2012	2172	5352
NlaIII	25					
NlaIV	25					

Enzyme	# Sites	Locations				
NotI	1	166				
NspI	4	589	2560	2852	3219	
Pfl1108I	2	2001	4126			
PflMI	1	696				
PleI	9	375	663	750	1546	3109
		3594	4097	5186	5194	
PshAI	1	1959				
Psp5II	1	2221				
Psp1406I	6	776	2144	2540	4334	4707
		5036				
PstI	1	4353				
PvuI	1	4478				
PvuII	3	1714	1807	2806		
RcaI	3	512	3935	4943		
RsaI	3	1261	3021	4588		
SacI	1	190				
SalI	1	179				
SapI	1	3099				
Sau96I	18					
Sau3AI	27					
ScaI	1	4588				
ScrFI	19					
SfaNI	20					
SfcI	5	360	3480	3671	4349	5470
SgrAI	1	433				
SphI	1	589				
SspI	2	4912	5043			
StyI	2	57	220			
TaqI	13					
TaqII	9	1022	1240	1913	3117	4456
		4641	4794	4811	5155	
TfiI	5	1793	2095	2265	2769	3190
ThaI	34					
TseI	31					
Tsp45I	8	1295	2123	2654	2867	2962
		4364	4575	5424		
Tsp509I	18					
Tth111I	1	2960				
Tth111II	6	953	1646	2676	3805	3812
		3844				
UbaJI	20					
VspI	5	207	375	1799	1858	4280
XbaI	1	326				
XcmI	3	970	1486	1504		
XhoI	1	158				
XmnI	3	208	2773	4707		

Enzymes that do not cut pET-22b(+):

AatII	AflII	AgeI	AscI	AvrII
BaeI	BsmI	BsrGI	Bsu36I	ClaI
FseI	KpnI	MunI	NheI	NruI
NsiI	NspV	PacI	PmeI	PmlI
RleAI	RsrII	SacII	SexAI	SfiI
SgfI	SmaI	SnaBI	SpeI	SrfI
Sse8387I	StuI	SunI	SwaI	