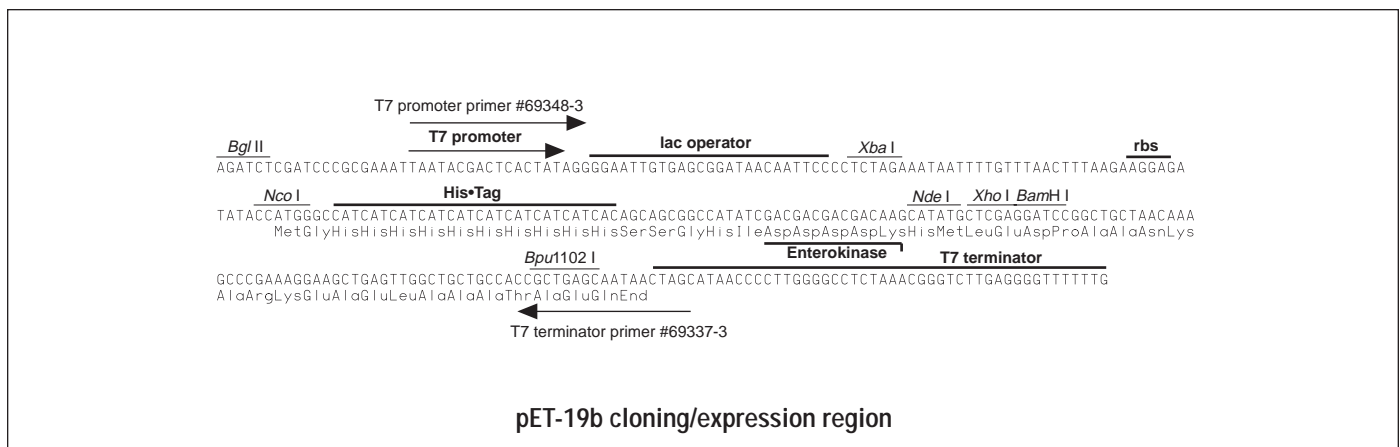
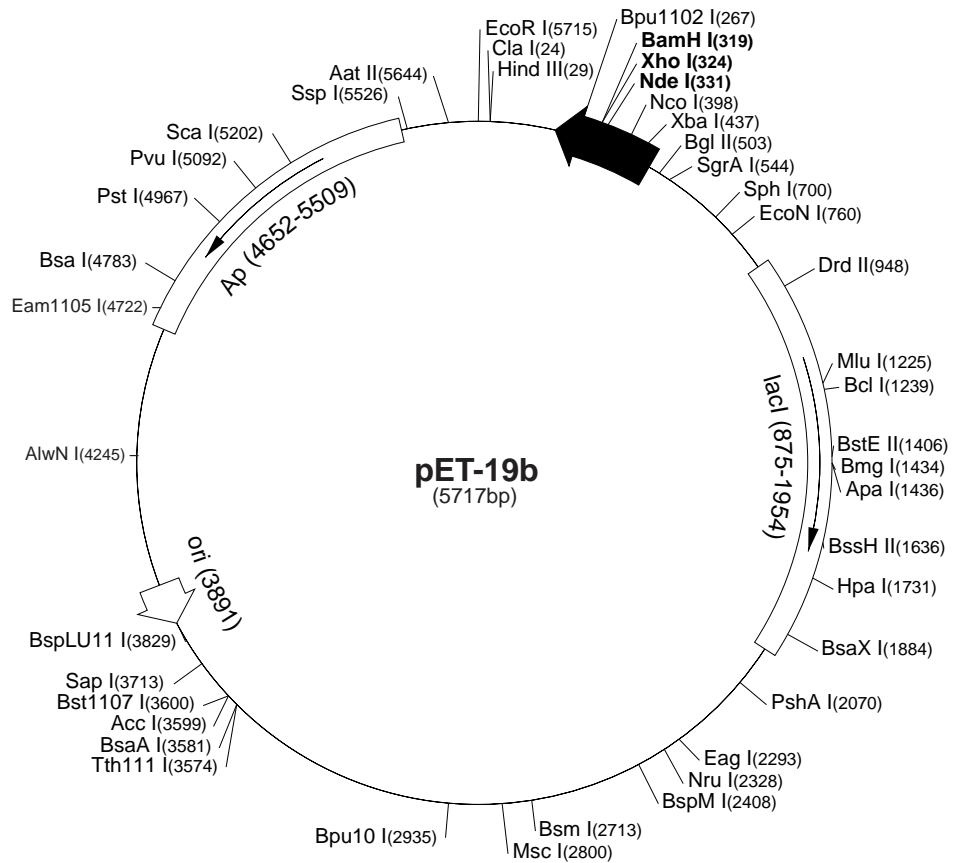


The pET-19b vector (Cat. No. 69677-3) carries an N-terminal His•Tag[®] sequence followed by an enterokinase site and three cloning sites. Unique sites are shown on the circle map. Note that the sequence is numbered by the pBR322 convention, so the T7 expression region is reversed on the circular map. The cloning/expression region of the coding strand transcribed by T7 RNA polymerase is shown below.

pET-19b sequence landmarks

T7 promoter	472-488
T7 transcription start	471
His•Tag coding sequence	366-395
Multiple cloning sites	
(<i>Nde</i> I - <i>Bam</i> H I)	319-335
T7 terminator	213-259
<i>lac</i> I coding sequence	875-1954
pBR322 origin	3891
<i>bla</i> coding sequence	4652-5509



pET-19b Restriction Sites

Enzyme	# Sites	Locations	Enzyme	# Sites	Locations	Enzyme	# Sites	Locations
AatII	1	5644	BssHII	1	1636	PfiMI	3	807 2675 2724
AccI	1	3599	Bst1107I	1	3600	PleI	7	486 774 861 1657 3723
AceIII	7	992 1720 2051 3338 3479 3781 5021	BstEII	1	1406			4208 4711
AcI	89		BstXI	3	1027 1156 1279	PshAI	1	2070
AfIII	2	1225 3829	BstYI	11		Psp5II	2	2793 2835
AluI	24		Cac8I	41		Psp1406I	5	887 2255 3154 4948 5321
AlwI	16		CjeI	26		PstI	1	4967
Alw21I	8	725 1209 2532 2823 3647 4147 5308 5393	CjePI	28		PvuI	1	5092
			Clal	1	24	PvuII	3	1825 1918 3420
Alw44I	4	1205 3643 4143 5389	CviJI	96		RcaI	4	623 4549 5557 5662
AlwNI	1	4245	CviRI	26		RsaI	4	165 1372 3635 5202
ApaI	1	1436	Ddel	11		SapI	1	3713
ApaBI	2	909 2406	DpnI	29		Sau96I	22	
ApoI	2	1500 5715	DraI	3	4588 4607 5299	Sau3AI	29	
AvaI	2	324 2779	DrdI	2	3522 3937	Scal	1	5202
Avall	9	1777 2153 2241 2490 2793 2835 3114 4860 5082	DrdII	1	948	ScrFI	24	
			Dsal	3	398 662 2801	SfaNI	24	
BamHI	1	319	EaeI	7	355 533 665 1899 2293 2798 5110	Sfcl	5	138 471 4094 4285 4963
BanI	12		EagI	1	2293	SgrAI	1	544
BanII	3	609 623 1436	Eam1105I	1	4722	SphI	1	700
BbsI	5	1371 1710 2084 2947 5700	EarI	3	843 3713 5517	SspI	1	5526
BbvI	28		Ecil	5	1002 2749 3903 4049 4877	StyI	3	244 398 2723
BccI	16		Eco47III	3	630 2131 3083	TaqI	14	
Bce83I	7	208 2039 2209 3920 4218 4459 5327	Eco57I	2	4377 5389	TaqII	8	1133 1351 2024 3731 5070 5255 5408 5425
Bcefl	5	744 1085 1712 2521 4331	EcoNI	1	760	TfiI	7	1904 2206 2360 2658 2879 3383 3804
Bcgl	8	1517 1551 2051 2085 3406 3440 5227 5261	EcoO109I	5	240 658 2793 2835 5698	Thal	39	
BclI	1	1239	EcoRI	1	5715	Tsel	28	
Bfal	6	257 438 2843 4324 4577 4912	EcoRII	10	129 948 1263 1803 1860 2412 2795 3855 3976 3989	Tsp45I	9	124 1406 2234 2501 3268 3481 3576 4978 5189
BglI	3	2289 2523 4842	EcoRV	2	187 1675	Tsp509I	16	
BglII	1	503	FauI	18		Tth111I	1	3574
BmgI	1	1434	FokI	14		Tth111II	8	324 1064 1757 3290 4419 4426 4458 5714
BpmI	6	1063 1552 2186 2740 3356 4792	Fspl	3	2712 2810 4944	UbaJI	24	
			GdIII	6	355 533 665 1899 2293 5110	VspI	4	486 1910 1969 4894
Bpu10I	1	2935	HaeI	8	953 2274 2346 2403 2800 3844 3855 4307	XbaI	1	437
Bpu1102I	1	267	HaeII	13		XcmI	3	1081 1597 1615
BsaI	1	4783	HaeIII	29		XhoI	1	324
BsaAI	1	3581	HgaI	15		XmnI	2	3387 5321
BsaBI	3	502 508 3026	HgiEII	2	823 4415			
BsaHI	8	548 569 683 1182 1865 2560 5259 5641	HhaI	44				
BsaJI	11		Hin4I	5	16 1124 2495 4721 4795			
BsaWI	7	189 1544 2047 3018 4035 4182 5013	HincII	2	1731 5263			
			HindIII	1	29			
BsaXI	1	1884	Hinfl	14				
Bsbl	2	3545 5265	Hpal	1	1731			
BscGI	13		HphI	17				
BsgI	3	1076 1276 2989	Maell	12				
Bsil	3	4002 5386 5693	MaeIII	18				
BsiEI	6	2010 2296 3745 4169 5092 5241	MbolI	15				
			MluI	1	1225			
BsII	22		Mmel	2	4044 4228			
BsmI	1	2713	MnlI	34				
BsmAI	7	922 1327 1453 1840 3470 4783 5559	MscI	1	2800			
			MseI	24				
BsmBI	2	1840 3470	MslI	10	1277 1565 1595 2385 2816 3011 3402 4974 5133 5492			
BsmFI	4	686 2227 2452 3100	MspI	35				
BsoFI	52		MspAII	11				
Bsp24I	12		Mwol	44				
Bsp1286I	11		NarI	5	548 569 683 1865 2560			
BspEI	2	189 3018	NciI	14				
BspGI	3	2413 2490 3355	NcoI	1	398			
BspLU11I	1	3829	NdeI	1	331			
BspMI	1	2408	NgoAIV	4	535 2123 2283 2637			
BsrI	25		NlaIII	31				
BsrBI	3	458 3762 5563	NlaIV	28				
BsrDI	4	1272 1638 4783 4957	NruI	1	2328			
BsrFI	8	160 535 544 911 2123 2283 2637 4802	NspI	4	700 3174 3466 3833			
			Pfi1108I	2	2112 4740			

Enzymes that do not cut pET-19b:

AfIII	AgeI	AscI	AvrII	BaeI
BseRI	BsrGI	Bsu36I	DraIII	FseI
KpnI	MunI	NheI	NotI	NsiI
NspV	Pacl	PmeI	PmlI	RleAI
RsrII	SacI	SacII	SalI	SexAI
SfiI	SgfI	Smal	SnaBI	SpeI
SrfI	Sse8387I	StuI	SunI	Swal