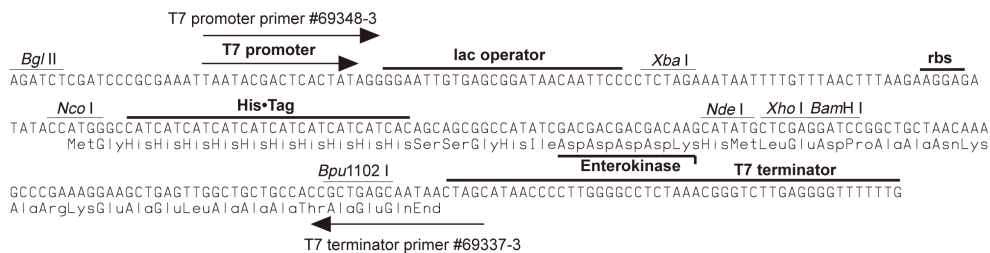
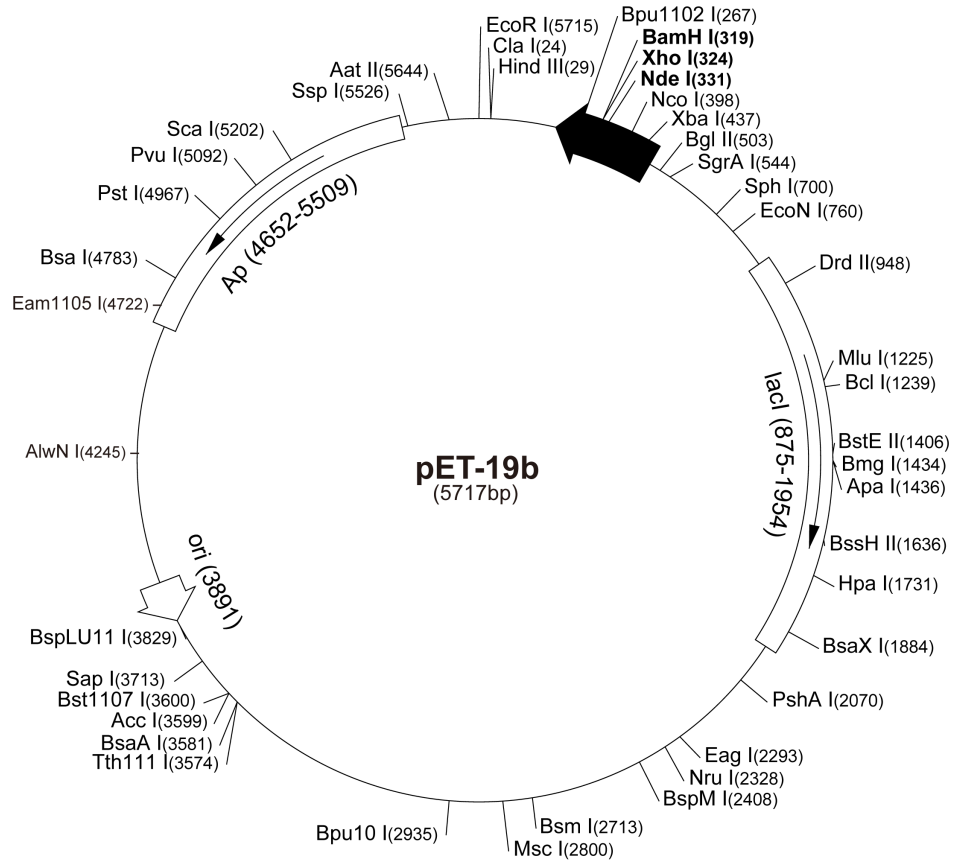


**pET-19b Vector**

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 cloning/expression region**

pET-19b Restriction Sites

Enzyme	# Sites	Locations	Enzyme	# Sites	Locations	Enzyme	# Sites	Locations		
AatII	1	5644	BssHII	1	1636	PflMI	3	807 2675 2724		
AccI	1	3599	Bst1107I	1	3600	PleI	7	486 774 861 1657 3723		
AccIII	7	992 1720 2051 3338 3479	BstEII	1	1406			4208 4711		
		3781 5021	BstXI	3	1027 1156 1279	PshAI	1	2070		
AcI	89		BstYI	11		Psp5II	2	2793 2835		
AflIII	2	1225 3829	Cac8I	41		Psp1406I	5	887 2255 3154 4948 5321		
AluI	24		CjeI	26		PstI	1	4967		
AlwI	16		CjePI	28		PvuI	1	5092		
Alw21I	8	725 1209 2532 2823 3647	Clal	1	24	PvuII	3	1825 1918 3420		
		4147 5308 5393	CviJI	96		RcaI	4	623 4549 5557 5662		
Alw44I	4	1205 3643 4143 5389	CviRI	26		RsaI	4	165 1372 3635 5202		
AlwNI	1	4245	DdeI	11		SapI	1	3713		
ApaI	1	1436	DpnI	29		Sau96I	22			
ApaBI	2	909 2406	DraI	3	4588 4607 5299	Sau3AI	29			
ApoI	2	1500 5715	DrdI	2	3522 3937	Scal	1	5202		
AvaI	2	324 2779	DrdII	1	948	ScrFI	24			
Avall	9	1777 2153 2241 2490 2793	Dsal	3	398 662 2801	SfaNI	24			
		2835 3114 4860 5082	EaeI	7	355 533 665 1899 2293	SfcI	5	138 471 4094 4285 4963		
BamHI	1	319			2798 5110	SgrAI	1	544		
BanI	12		EagI	1	2293	SphI	1	700		
BanII	3	609 623 1436	Eam1105I	1	4722	Sspl	1	5526		
BbsI	5	1371 1710 2084 2947 5700	EarI	3	843 3713 5517	StyI	3	244 398 2723		
BbvI	28		Ecil	5	1002 2749 3903 4049 4877	TaqI	14			
BccI	16		Eco47III	3	630 2131 3083	TaqII	8	1133 1351 2024 3731 5070		
Bce83I	7	208 2039 2209 3920 4218	Eco57I	2	4377 5389			5255 5408 5425		
		4459 5327	EcoNI	1	760	TfiI	7	1904 2206 2360 2658 2879		
BceII	5	744 1085 1712 2521 4331	EcoO109I	5	240 658 2793 2835 5698			3383 3804		
BcgI	8	1517 1551 2051 2085 3406	EcoRI	1	5715	Thal	39			
		3440 5227 5261	EcoRII	10	129 948 1263 1803 1860	Tsel	28			
BclI	1	1239			2412 2795 3855 3976 3989	Tsp45I	9	124 1406 2234 2501 3268		
Bfal	6	257 438 2843 4324 4577	EcoRV	2	187 1675			3481 3576 4978 5189		
		4912	FauI	18		Tsp509I	16			
BglI	3	2289 2523 4842	FokI	14		Tth111I	1	3574		
BglII	1	503	FspI	3	2712 2810 4944	Tth111III	8	324 1064 1757 3290 4419		
Bmgl	1	1434	GdIII	6	355 533 665 1899 2293			4426 4458 5714		
Bpml	6	1063 1552 2186 2740 3356			5110	UbaII	24			
		4792	HaeI	8	953 2274 2346 2403 2800	VspI	4	486 1910 1969 4894		
Bpu10I	1	2935			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	Hgal	15		XmnI	2	3387 5321		
BsaBI	3	502 508 3026	HgiEI	2	823 4415					
BsaHI	8	548 569 683 1182 1865	Hhal	44		Enzymes that do not cut pET-19b:				
		2560 5259 5641	Hin4I	5	16 1124 2495 4721 4795	AflIII	Agel	AscI	AvrII	BaeI
BsaJI	11		HincII	2	1731 5263	BseRI	BsrGI	Bsu36I	DraIII	FseI
BsaWI	7	189 1544 2047 3018 4035	HindIII	1	29	KpnI	MunI	NheI	NotI	NsiI
		4182 5013	Hinfl	14		NspV	Pacl	PmeI	PmlI	RleAI
BsaXI	1	1884	Hpal	1	1731	RsrII	Sacl	SacII	Sall	SexAI
Bsbl	2	3545 5265	HphI	17		Sfil	Sgfl	SmaI	SnaBI	SpeI
BscGI	13		MaeII	12		SrfI	Sse8387I	StuI	SunI	Swal
BsgI	3	1076 1276 2989	MaeIII	18						
Bsil	3	4002 5386 5693	MbolI	15						
BsiEI	6	2010 2296 3745 4169 5092	MluI	1	1225					
		5241	MmeI	2	4044 4228					
BsII	22		MnlI	34						
BsmI	1	2713	MscI	1	2800					
BsmAI	7	922 1327 1453 1840 3470	MseI	24						
		4783 5559	MslI	10	1277 1565 1595 2385 2816					
BsmBI	2	1840 3470			3011 3402 4974 5133 5492					
BsmFI	4	686 2227 2452 3100	MspI	35						
BsoFI	52		MspA1I	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					
Bsrl	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	NspI	4	700 3174 3466 3833					
		2283 2637 4802	Pfl1108I	2	2112 4740					