pET-23a-d(+) Vectors

TB051 12/98

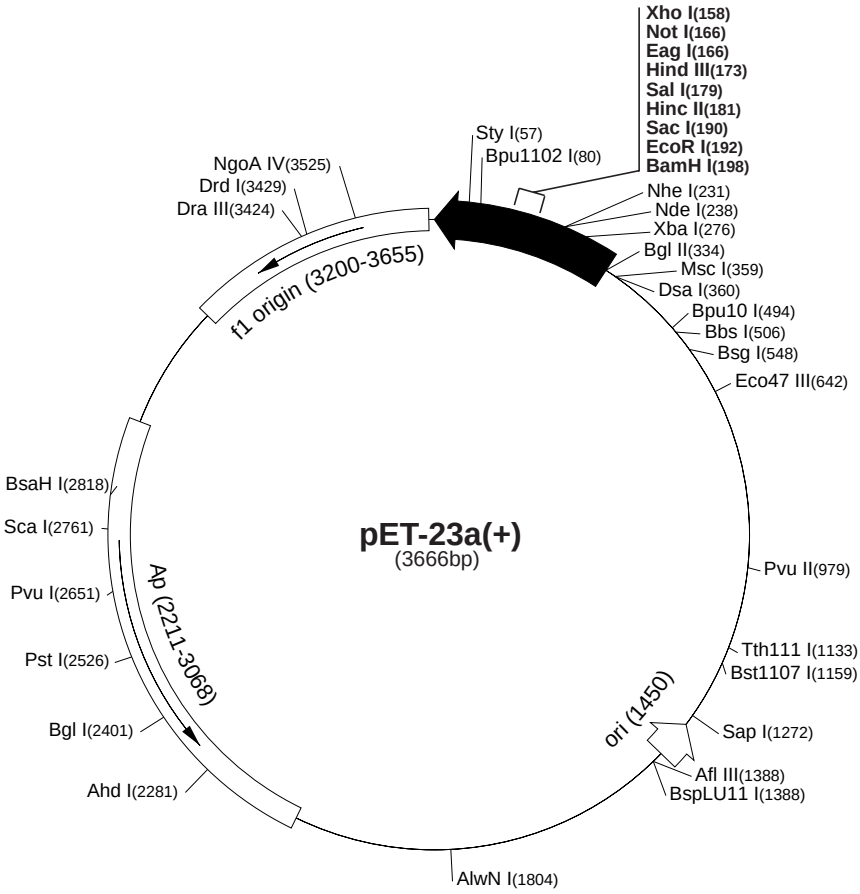
	Cat. No.
pET-23a DNA	69745-3
pET-23b DNA	69746-3
pET-23c DNA	69747-3
pET-23d DNA	69748-3

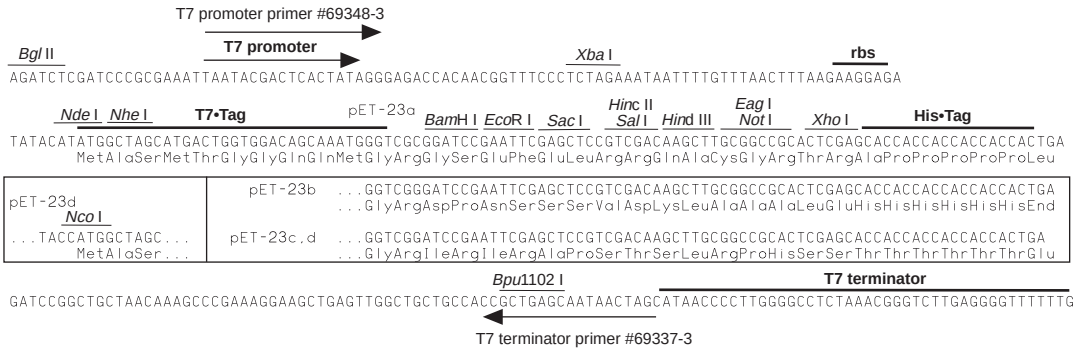
The pET-23a-d(+) vectors carry an N-terminal T7•Tag® sequence plus an optional C-terminal His•Tag® sequence. These vectors differ from pET-21a-d(+) by the "plain" T7 promoter instead of the T7*lac* promoter and by the absence of the *lacI* gene. Unique sites are shown on the circle map. Note that the 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-23a(+) sequence landmarks

T7 promoter	303-319
T7 transcription start	302
T7•Tag coding sequence	207-239
Multiple cloning sites	
(*Bam*H I - *Xho* I)	158-203
His•Tag coding sequence	140-157
T7 terminator	26-72
pBR322 origin	1450
bla coding sequence	2211-3068
f1 origin	3200-3655

The maps for pET-23b(+), pET-23c(+) and pET-23d(+) are the same as pET-23a(+) (shown) with the following exceptions: pET-23b(+) is a 3665bp plasmid; subtract 1bp from each site beyond *Bam*H I at 198. pET-23c(+) is a 3664bp plasmid; subtract 2bp from each site beyond *Bam*H I at 198. pET-23d(+) is a 3663bp plasmid; the *Bam*H I site is in the same reading frame as in pET-23c(+). An *Nco* I site is substituted for the *Nde* I site with a net 1bp deletion at position 238 of pET-23c(+). As a result, *Nco* I cuts pET-23d(+) at 234, and *Nhe* I cuts at 229. For the rest of the sites, subtract 3bp from each site beyond position 239 in pET-23a(+). *Nde* I does not cut pET-23d(+). Note also that *Sty* I is not unique in pET-23d(+).





pET-23a-d(+) cloning/expression region

pET-23a(+) Restriction Sites

TB051 12/98

Enzyme	# Sites	Locations				
AccI	2	180	1158			
AceIII	5	897	1038	1340	2580	3264
AciI	49					
AflIII	1	1388				
AluI	18					
AlwI	13					
Alw21I	7	159	190	382	1206	1706
		2867	2952			
Alw44I	3	1202	1702	2948		
AlwNI	1	1804				
ApoI	3	192	3226	3237		
AvaI	2	158	338			
AvaII	5	352	394	673	2419	2641
BamHI	1	198				
BanI	2	2229	3461			
BanII	2	190	3499			
BbsI	1	506				
BbvI	21					
BccI	5	2318	2442	2729	3414	3431
Bce83I	5	21	1479	1777	2018	2886
BcefI	2	1890	3450			
BcgI	7	160	194	228	965	999
		2786	2820			
BfaI	8	70	232	277	402	1883
		2136	2471	3575		
BglI	1	2401				
BglII	1	334				
BpmI	2	915	2351			
Bpu10I	1	494				
Bpu1102I	1	80				
BsaI	2	301	2342			
BsaAI	2	1140	3424			
BsaBI	2	333	585			
BsaHI	1	2818				
BsaJI	3	57	360	1548		
BsaWI	5	2	577	1594	1741	2572
BsaXI	1	3372				
BsbI	2	1104	3331			
BscGI	10	44	364	749	1082	1715
		2061	2282	2306	2828	3518
BsgI	1	548				
BsiI	2	1561	2945			
BsiEI	5	169	1304	1728	2651	2800
BslI	12					
BsmAI	4	301	1029	2342	3118	
BsmBI	1	1029				
BsmFI	2	659	3639			
BsoFI	33					
Bsp24I	6	201	233	1881	1913	2059
		2091				
Bsp1286I	8	159	190	382	1206	1706
		2867	2952	3499		
BspEI	2	2	577			
BspGI	1	914				
BspLU11I	1	1388				
BsrI	15					
BsrBI	3	1321	3122	3568		
BsrDI	2	2342	2516			
BsrFI	2	2361	3525			
Bst1107I	1	1159				
BstYI	10	132	198	334	580	2029
		2040	2126	2138	2906	2923
Cac8I	16					
CjeI	12					
CjePI	12					
CviJI	56					
CviRI	13					
DdeI	10	80	101	136	494	656
		1196	1663	2072	2238	2778
DpnI	19					
DraI	3	2147	2166	2858		
DraIII	1	3424				

Enzyme	# Sites	Locations				
DrdI	3	1081	1496	3379		
DrdII	1	3429				
DsaI	1	360				
EaeI	3	166	357	2669		
EagI	1	166				
Eam1105I	1	2281				
EarI	2	1272	3076			
EciI	3	1462	1608	2436		
Eco47III	1	642				
Eco57I	2	1936	2948			
EcoO109I	3	53	352	394		
EcoRI	1	192				
EcoRII	4	354	1414	1535	1548	
FauI	8	318	403	684	870	1091
		1101	3561	3630		
FokI	8	607	669	747	933	1074
		2247	2428	2715		
FspI	2	369	2503			
GdiII	2	166	2669			
HaeI	4	359	1403	1414	1866	
HaeII	6	561	644	1266	1636	3575
		3583				
HaeIII	13					
HgaI	6	924	1081	1499	2077	2807
		3641				
HgiEII	1	1974				
HhaI	23					
Hin4I	2	2280	2354			
HincII	1	181				
HindIII	1	173				
HinfI	9	309	438	942	1288	1363
		1759	2276	3351	3373	
HphI	9	433	1008	1017	2124	2351
		2767	2973	3008	3425	
MaeII	12					
MaeIII	15					
MboII	8	506	1259	2050	2121	2876
		2954	3063	3564		
MmeI	3	1603	1787	3401		
MnlI	19					
MscI	1	359				
MseI	22					
MslI	6	375	570	961	2533	2692
		3051				
MspI	17					
MspA1I	6	84	979	1098	1730	1975
		2916				
MwoI	18					
NciI	7	398	726	1032	1067	1768
		2464	2815			
NdeI	1	238				
NgoAIV	1	3525				
NheI	1	231				
NlaIII	15					
NlaIV	15					
NotI	1	166				
NspI	3	733	1025	1392		
Pfl1108I	1	2299				
PleI	6	317	1282	1767	2270	3359
		3367				
Psp5II	2	352	394			
Psp1406I	4	713	2507	2880	3209	
PstI	1	2526				
PvuI	1	2651				
PvuII	1	979				
RcaI	2	2108	3116			
RsaI	2	1194	2761			
SacI	1	190				
SalI	1	179				
SapI	1	1272				
Sau96I	10	53	352	394	673	860
		2323	2402	2419	2641	3415

Enzyme	# Sites	Locations				
Sau3AI	19					
ScaI	1	2761				
ScrFI	11					
SfaNI	13					
SfcI	5	302	1653	1844	2522	3643
SspI	2	3085	3216			
StyI	1	57				
TaqI	7	159	180	190	331	1488
		2932	3457			
TaqII	6	1290	2629	2814	2967	2984
		3328				
TfiI	3	438	942	1363		
ThaI	17					
TseI	21					
Tsp45I	6	827	1040	1135	2537	2748
		3597				
Tsp509I	9	192	268	318	2148	2454
		2709	3200	3226	3237	
Tth111I	1	1133				
Tth111II	4	849	1978	1985	2017	
UbaJI	12					
VspI	2	317	2453			
XbaI	1	276				
XhoI	1	158				
XmnI	2	946	2880			

Enzymes that do not cut pET-23a(+):

AatII	AflII	AgeI	ApaI	ApaBI
AscI	AvrII	BaeI	BclI	BmgI
BseRI	BsmI	BspMI	BsrGI	BssHII
BstEII	BstXI	Bsu36I	ClaI	EcoNI
EcoRV	FseI	HpaI	KpnI	MluI
MunI	NarI	NcoI	NruI	NsiI
NspV	PacI	PflMI	PmeI	PmlI
PshAI	RleAI	RsrII	SacII	SexAI
SfiI	SgfI	SgrAI	SmaI	SnaBI
SpeI	SphI	SrfI	Sse8387I	StuI
SunI	SwaI	XcmI		