

pET-23a-d(+) Vectors

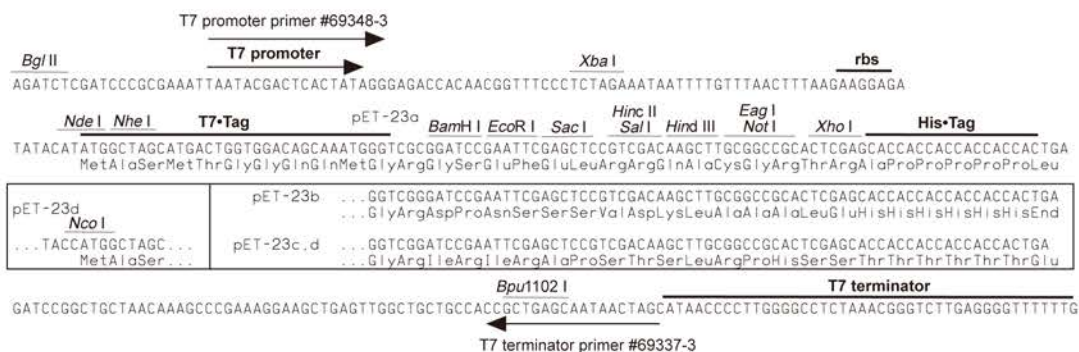
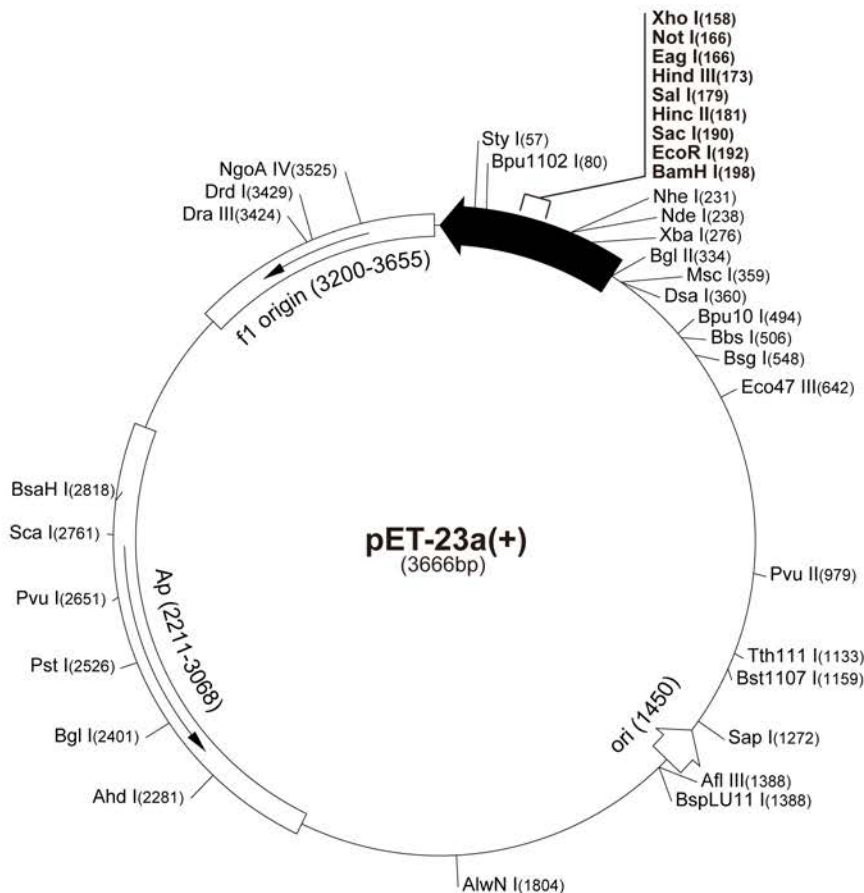
	Cat. No.
pET-23a DNA	69745-3
pET-23b DNA	69746-3
pET-23c DNA	69747-3
pET-23d DNA	69748-3

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 T7lac 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	
(<i>Bam</i> H I - <i>Xho</i> I)	158-203
His•Tag coding sequence	140-157
T7 terminator	26-72
pBR322 origin	1450
<i>bla</i> 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

Enzyme	# Sites	Locations
AccI	2	180 1158
AceIII	5	897 1038 1340 2580 3264
Acil	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
Avall	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
BceII	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
Bsbl	2	1104 3331
BscGI	10	44 364 749 1082 1715
		2061 2282 2306 2828 3518
BsgI	1	548
Bsil	2	1561 2945
BsiEI	5	169 1304 1728 2651 2800
BsII	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
DrallI	1	3424

Enzyme	# Sites	Locations
DrdI	3	1081 1496 3379
DrdII	1	3429
Dsal	1	360
EaeI	3	166 357 2669
EagI	1	166
Eam1105I	1	2281
EarI	2	1272 3076
Ecil	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
HgiEI	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
Maell	12	
MaellI	15	
MbolI	8	506 1259 2050 2121 2876
		2954 3063 3564
MmeI	3	1603 1787 3401
MnlI	19	
MscI	1	359
MseI	22	
MsiI	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	
NottI	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
Sall	1	179
SapI	1	1272
Sau96I	10	53 352 394 673 860
		2323 2402 2419 2641 3415

Enzyme	# Sites	Locations
Sau3AI	19	
Scal	1	2761
ScrFI	11	
SfaNI	13	
Sfcl	5	302 1653 1844 2522 3643
Sspl	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
UbaII	12	
VspI	2	317 2453
XbaI	1	276
XhoI	1	158
XmnI	2	946 2880

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

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