

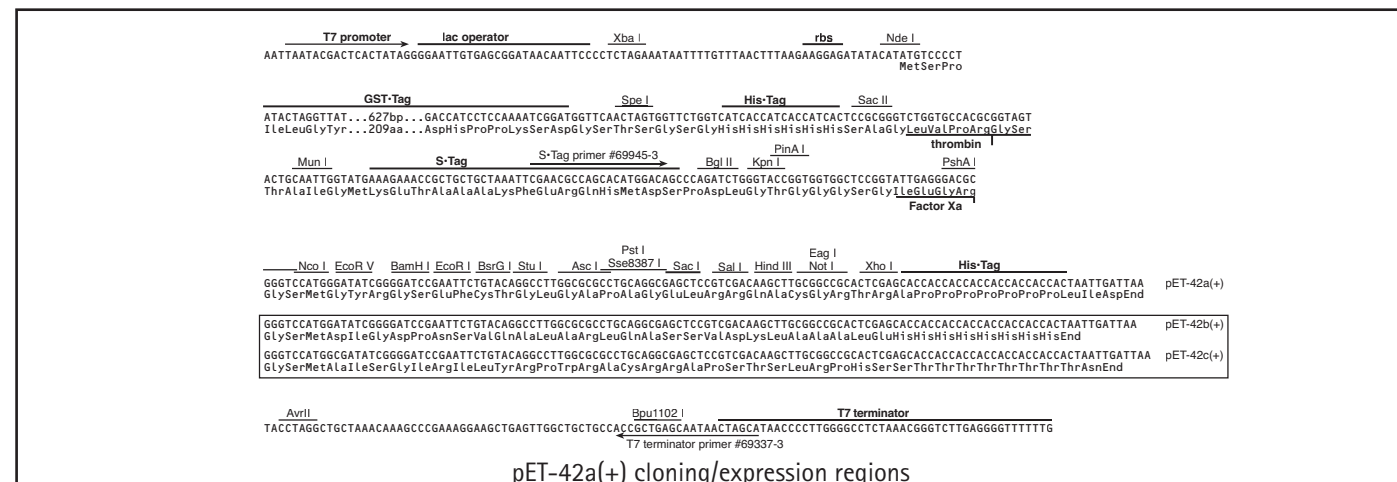
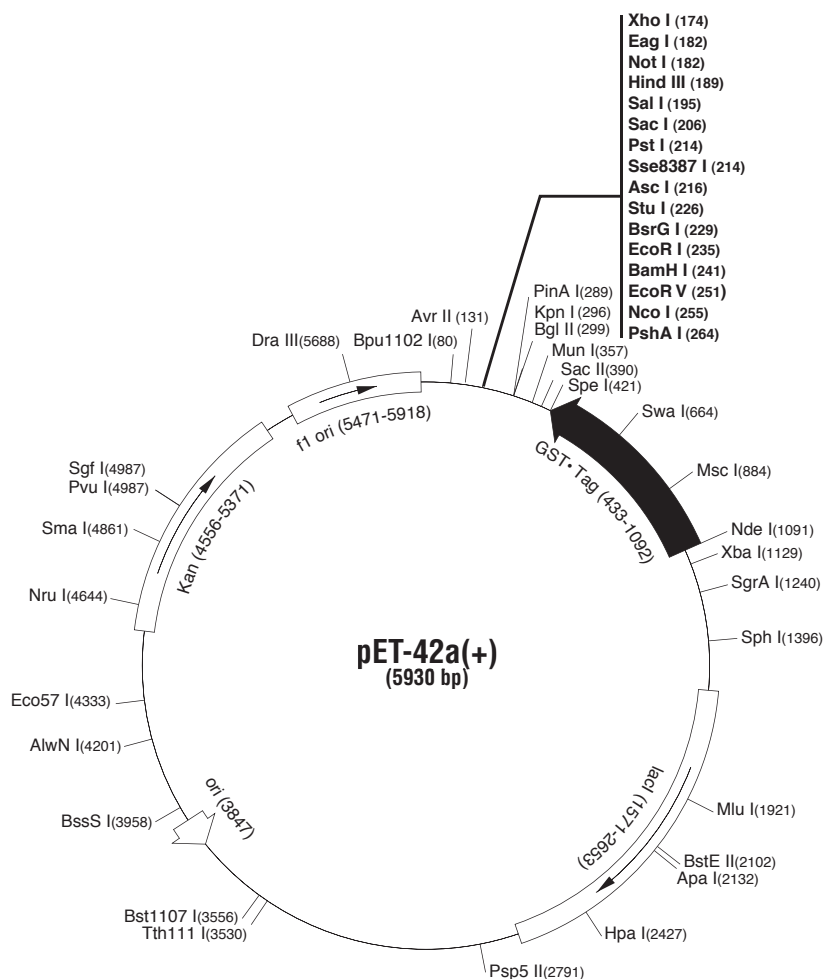
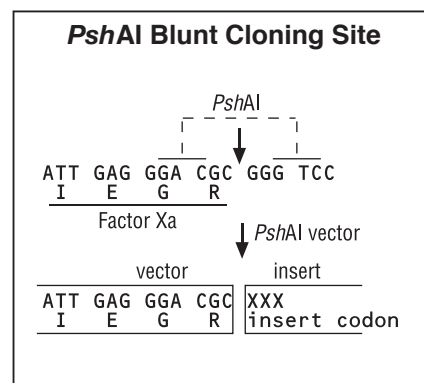
pET-42a-c(+) Vector

	Cat. No.
pET-42a(+) DNA	70561-3
pET-42b(+) DNA	70562-3
pET-42c(+) DNA	70563-3

pET-42a(+) sequence landmarks

T7 promoter	1164-1180
T7 transcription start	1163
GST•Tag coding sequence	433-1092
His•Tag coding sequence	394-411
S•Tag coding sequence	307-351
Multiple cloning sites (<i>Psh</i> AI- <i>Xho</i> I)	174-264
His•Tag coding sequence	150-173
T7 terminator	26-72
<i>lac</i> I coding sequence	1571-2653
pBR322 origin	3847
Kan coding sequence	4556-5371
F1 origin	5471-5918

The pET-42 series is designed for cloning and high-level expression of peptide sequences fused with the 220 aa GST•Tag™ protein. 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 circle 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). Vector encoded sequence can be completely removed when cloning into the *Psh*AI site (as shown below) and then cleaving the GST fusion protein with Factor Xa.



pET-42a(+) Restriction Sites

Enzyme	# Sites	Locations			
AccI	2	196	3555		
AcII	74				
AfiIII	3	849	1921	3785	
AluI	25				
AlwI	12				
Alw26I	6	1618	2023	2149	2536 3426
		5003			
AlwNI	1	4201			
ApaI	1	2132			
ApaLI	3	1901	3599	4099	
ApoI	7	235	328	2196	4600 4784
		5490	5501		
AscI	1	216			
AvaI	2	174	4859		
AvaII	5	259	594	2473	2791 3070
AvrII	1	131			
BamHI	1	241			
BanI	9	292	377	1243	1264 1378
		1841	2560	2690	5725
BanII	6	206	1305	1319	2132 4642
		5763			
BbsI	3	2067	2406	2903	
BbvI	24				
BcgI	4	210	1029	2213	3396
BcgI'	4	176	1063	2247	3362
BclI	2	653	1935		
BfaI	10	70	132	422	1077 1130
		2764	2799	4280	4587 5839
BglIII	1	299			
BpmI	3	1759	2248	3312	
Bpu10I	2	2891	5004		
Bpu1102I	1	80			
BsaAI	2	3537	5688		
BsaBI	3	1194	1204	2982	
BsaHI	5	1244	1265	1379	1878 2561
BsaJI	12				
BsaWI	9	2	277	289	2240 2743
		2974	3991	4138	5122
BsgI	4	807	1772	1972	2945
BsiEI	5	185	2706	3701	4125 4987
BsiHKAI	7	175	206	1421	1905 2779
		3603	4103		
BsII	28				
BsmI	2	4871	4948		
BsmBI	3	2536	3426	5003	
BsmFI	5	252	1100	1382	3056 5903
Bsp1286I	12				
BspEI	2	2	2974		
BspLU11I	2	849	3785		
BsrI	20				
BsrBI	5	800	1150	3718	5386 5832
BsrDI	2	1968	2334		
BsrFI	6	289	1231	1240	1607 4941
		5789			
BsrGI	1	229			
BssHII	2	216	2332		
BssSI	1	3958			
Bst1107I	1	3556			
BstEII	1	2102			
BstXI	3	1723	1852	1975	
BstYI	8	241	299	1485	2697 2977
		4426	4437	5236	
Cac8I	43				
Clal	2	1198	4678		
CviJI	89				
DdeI	11				
DpnI	23				
DraI	2	555	664		
DraIII	1	5688			
DrdI	3	3478	3893	5643	
DsaI	3	255	387	1358	
EaeI	5	182	882	1229	1361 2595
EagI	1	182			
EarI	4	1009	1539	3669	4800
Eco47III	2	1326	3039		
Eco57I	1	4333			
EcoNI	3	1080	1456	4899	
EcoO109I	4	53	1056	1354	2791
EcoRI	1	235			
EcoRII	10	581	1644	1959	2499 2556
		3811	3932	3945	4875 5232
EcoRV	1	251			
FauI	18				
Fnu4HI	40				
FokI	13				
HaeII	13				
HaeIII	24				
HgaI	13				
HhaI	46				
HincII	2	197	2427		
HindIII	1	189			
Hinfl	17				
HpaI	1	2427			
HphI	21				
KpnI	1	296			
MaellI	16				
MbolI	15				
MluI	1	1921			
MnlI	25				
MscI	1	884			
MseI	31				
MsiI	7	997	1973	2261	2291 2772
		2967	3358		
MspI	28				
MspA1I	10	84	341	389	1951 2521
		2614	3376	3495	4127 4372
MunI	1	357			
MwoI	36				
NarI	4	1244	1265	1379	2561
NciI	12				
NcoI	1	255			
NdeI	1	1091			
NgoAIV	2	1231	5789		
NlaIII	29				
NlaIV	23				
NotI	1	182			
NruI	1	4644			
NsiI	2	4837	5103		
NspI	5	853	1396	3130	3422 3789
NspV	2	326	692		
PfiMI	3	318	1503	5250	
PinAI	1	289			
PleI	9	1178	1470	1557	2353 3679
		4164	5219	5623	5631
PshAI	1	264			
Psp1406I	3	1583	3110	5473	
Psp5II	1	2791			
PstI	1	214			
PvuI	1	4987			
PvuII	3	2521	2614	3376	
RcaI	3	1319	4505	5380	
RsaI	7	231	294	366	518 2068
		3591	4822		
SacI	1	206			
SacII	1	390			
Sall	1	195			
SapI	2	1009	3669		
Sau3AI	23				
Sau96I	14				
Scal	2	366	518		
ScrFI	22				
SfaNI	24				
Sfcl	5	210	1163	4050	4241 5907
Sgfl	1	4987			
SgrAI	1	1240			
SmaI	1	4861			
SpeI	1	421			
SphI	1	1396			
Sse8387I	1	214			
SspI	2	4912	5480		
StuI	1	226			
StyI	4	57	131	221	255
Swal	1	664			
TalI	16				
TaqI	19				
TfiI	8	2600	2835	3339	3760 4898
		4954	5126	5217	
ThaI	39				
TseI	24				
Tsp45I	6	2102	3224	3437	3532 5134
		5861			
Tsp509I	29				
TspRI	11				
Tth111I	1	3530			
VspI	6	139	1178	2606	2665 5186
		5375			
XbaI	1	1129			
XcmI	3	1777	2293	2311	
XhoI	1	174			
XmnI	3	698	3343	5376	

Enzymes that do not cut pET42a(+):					
AatII	AfiII	AhdI	BglI	BsaI	BseRI
BspMI	Bsu36I	FseI	FspI	NheI	Pacl
PmeI	PmlI	RsrII	SanDI	SexAI	Sfil
SnaBI	SrfI	SunI	UbaEI		