

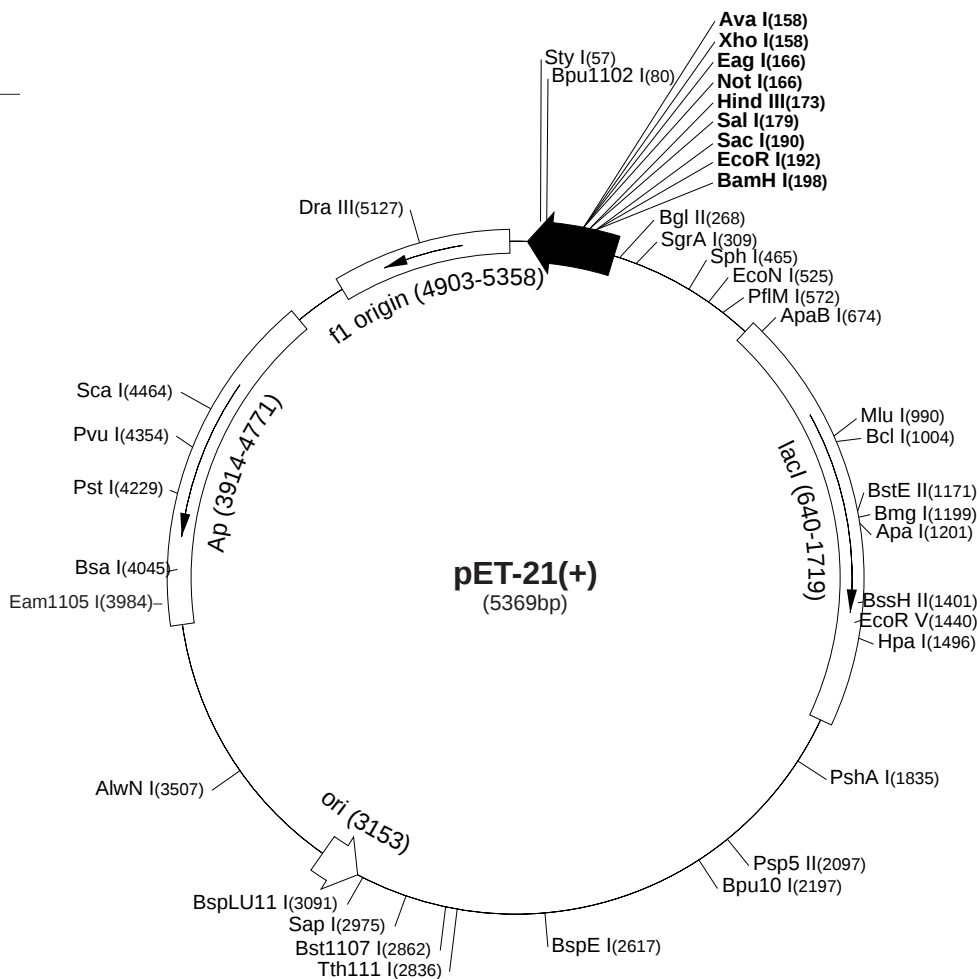
pET-21(+) Vector

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pET-21(+) (Cat. No. 69770-3) is a transcription vector designed for expression from bacterial translation signals carried within a cloned insert. It therefore lacks the ribosome binding site and ATG start codon present on the pET translation vectors. A C-terminal His•Tag® sequence is available. 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-21(+) sequence landmarks

T7 promoter	237-253
T7 transcription start	236
Multiple cloning sites (<i>Bam</i> H I - <i>Xho</i> I)	158-203
His•Tag® coding sequence	140-157
T7 terminator	26-72
<i>lacI</i> coding sequence	640-1719
pBR322 origin	3153
<i>bla</i> coding sequence	3914-4771
f1 origin	4903-5358



pET-21(+) cloning/expression region

pET-21(+) Restriction Sites

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Enzyme	# Sites	Locations					Enzyme	# Sites	Locations					Enzyme	# Sites	Locations				
AccI	2	180	2861				Bst1107I	1	2862				Psp1406I	6	652	2020	2416	4210	4583	
AccII	8	757	1485	1816	2600	2741	BstEII	1	1171						4912					
		3043	4283	4967			BstXI	3	792	921	1044		PstI	1	4229					
AcII	80						BstYI	12					PvuI	1	4354					
AflIII	2	990	3091				Cac8I	38					PvuII	3	1590	1683	2682			
AluI	25						CjeI	24					RcaI	3	388	3811	4819			
AlwI	16						CjePI	18					RsaI	3	1137	2897	4464			
Alw21I	9	159	190	490	974	2085	CviJI	85					SacI	1	190					
		2909	3409	4570	4655		CviRI	24					Sall	1	179					
Alw44I	4	970	2905	3405	4651		DdeI	11					SapI	1	2975					
AlwNI	1	3507					DpnI	27					Sau96I	18						
ApaI	1	1201					DraI	3	3850	3869	4561		Sau3AI	27						
ApaBI	1	674					DraIII	1	5127				Scal	1	4464					
ApoI	4	192	1265	4929	4940		DrdI	3	2784	3199	5082		ScrFI	19						
AvaI	1	158					DrdII	2	713	5132			SfaNI	20						
Avall	7	1542	1918	2006	2097	2376	DsaI	2	427	2063			Sfcl	5	236	3356	3547	4225 5346		
		4122	4344				EaeI	5	166	298	430 1664 4372		SgrAI	1	309					
BamHI	1	198					EagI	1	166				SphI	1	465					
BanI	9	312	333	447	910	1629	Eam1105I	1	3984				SspI	2	4788	4919				
		1759	1885	3932	5164		EarI	3	608	2975	4779		StyI	1	57					
BanII	5	190	374	388	1201	5202	Ecil	4	767	3165	3311 4139		TaqI	13						
BbsI	4	1136	1475	1849	2209		Eco47III	3	395	1896	2345		TaqII	9	898	1116	1789	2993 4332		
BbvI	26						Eco57I	2	3639	4651					4517	4670	4687	5031		
BccI	13						EcoNI	1	525				TfiI	5	1669	1971	2141	2645 3066		
Bce83I	7	21	1804	1974	3182	3480	EcoO109I	3	53	423	2097		ThaI	34						
		3721	4589				EcoRI	1	192				TseI	26						
BceII	5	509	850	1477	3593	5153	EcoRII	7	713	1028	1568 1625 3117		Tsp45I	8	1171	1999	2530	2743 2838		
Bcgl	10	160	194	1282	1316	1816			3238	3251					4240	4451	5300			
		1850	2668	2702	4489	4523	EcoRV	1	1440				Tsp509I	15						
BclI	1	1004					FauI	17					Tth111I	1	2836					
Bfal	7	70	203	2105	3586	3839	FokI	10	1036	1045	2310 2372 2450		Tth111II	6	829	1522	2552	3681 3688		
		4174	5278						2636	2777	3950 4131 4418				3720					
BglI	2	2054	4104				FspI	2	2072	4206			UbaJI	20						
BglII	1	268					GdiII	5	166	298	430 1664 4372		VspI	4	251	1675	1734	4156		
BmgI	1	1199					HaeI	5	718	2039	3106 3117 3569		XcmI	3	846	1362	1380			
BpmI	5	828	1317	1951	2618	4054	HaeII	14					XhoI	1	158					
Bpu10I	1	2197					HaeIII	24					XmnI	2	2649	4583				
Bpu1102I	1	80					Hgal	12					Enzymes that do not cut pET-21(+):							
Bsal	1	4045					HgiEII	2	588	3677			AatII	AflII	AgeI	AscI	AvrII			
BsaAI	2	2843	5127				HhaI	45					BaeI	BseRI	BsmI	BspMI	BsrGI			
BsaBI	3	267	273	2288			Hin4I	3	889	3983	4057		Bsu36I	Clal	FseI	KpnI	MscI			
BsaHI	6	313	334	448	947	1630	HincII	2	181	1496			MunI	NcoI	NdeI	NheI	NruI			
		4521					HindIII	1	173				NsiI	NspV	PacI	PmeI	PmlI			
BsaJI	6	57	427	433	1625	2063	Hinfl	14					RleAI	RsrII	SacII	SexAI	SfiI			
		3251					HpaI	1	1496				Sgfi	Smal	SnaBI	SpeI	SrfI			
BsaWI	7	2	1309	1812	2280	3297	HphI	16					Sse8387I	StuI	SunI	Swal	XbaI			
		3444	4275				MaeII	15												
BsaXI	2	1649	5075				MaeIII	18												
Bsbl	2	2807	5034				MbolI	14												
BscGI	13						Mlul	1	990											
BsgI	3	841	1041	2251			Mmel	3	3306	3490	5104									
Bsil	2	3264	4648				MnII	26												
BsiEI	6	169	1775	3007	3431	4354	MseI	26												
		4503					MslI	9	1042	1330	1360 2078 2273									
BsII	20								2664	4236	4395 4754									
BsmAI	7	687	1092	1218	1605	2732	MspI	31												
		4045	4821				MspAII	9	84	1020	1590 1683 2682									
BsmBI	2	1605	2732						2801	3433	3678 4619									
BsmFI	4	451	1992	2362	5342		Mwol	38												
BsoFI	46						NarI	4	313	334	448 1630									
Bsp24I	10	280	312	831	863	1133	NciI	12												
		1165	3584	3616	3762	3794	NgoAIV	4	300	1888	2048 5228									
Bsp1286I	13						NlaIII	24												
BspEI	2	2	2280				NlaIV	25												
BspGI	1	2617					NotI	1	166											
BspLU11I	1	3091					NspI	4	465	2436	2728 3095									
BsrI	25						Pfi1108I	2	1877	4002										
BsrBI	4	223	3024	4825	5271		PfiIMI	1	572											
BsrDI	4	1037	1403	4045	4219		PleI	9	251	539	626 1422 2985									
BsrFI	7	300	309	676	1888	2048			3470	3973	5062 5070									
		4064	5228				PshAI	1	1835											
BssHII	1	1401					Psp5II	1	2097											