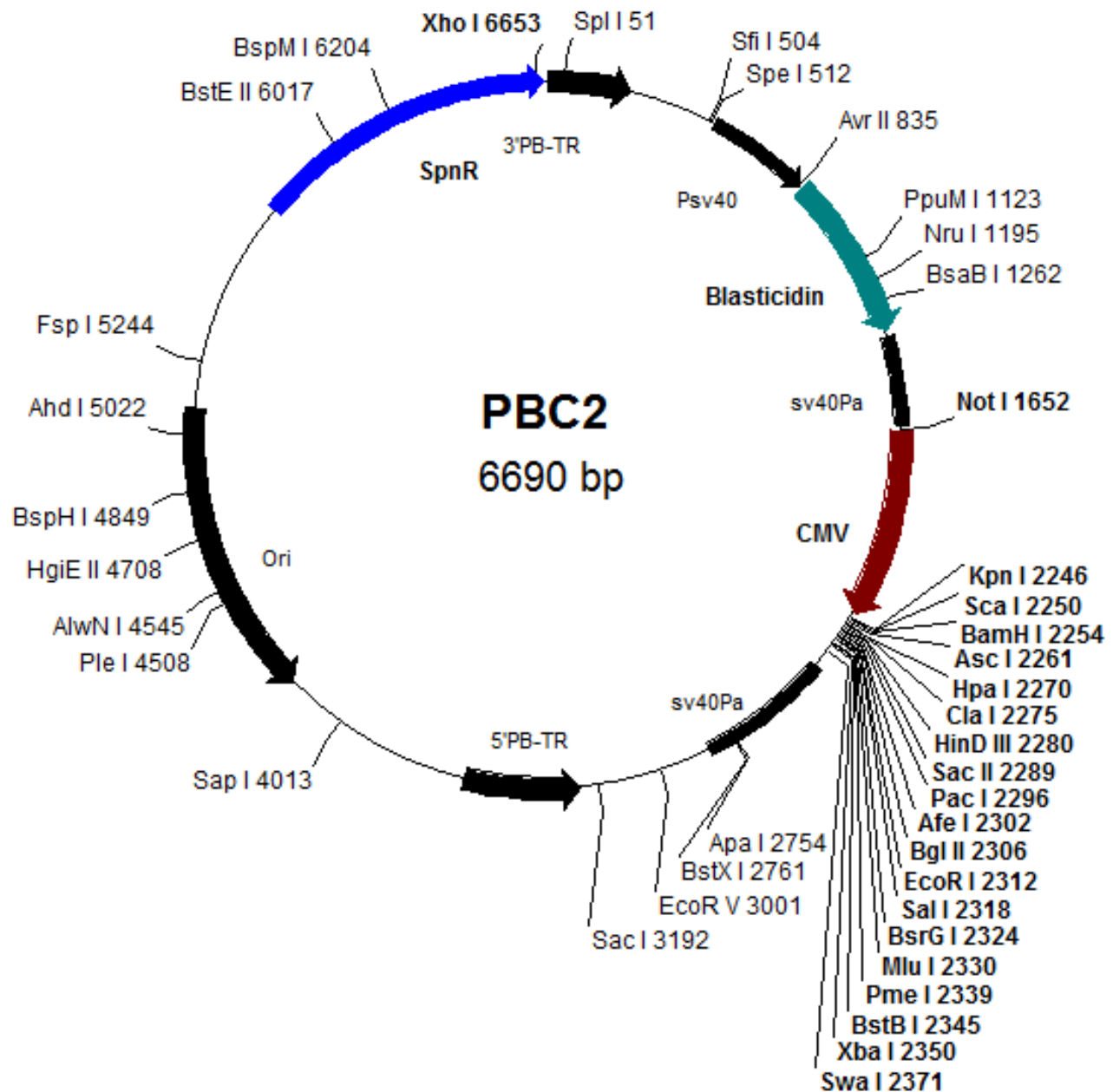


Vector: PBC2 (MOLab modified PiggyBac vector with CMV promoter)

Antibiotic Selection: Spectinomycin or Blasticidin-resistant

Creator(s): Xian Chen and Sheng Wen, Molecular Oncology Lab of The University of Chicago

Date of Construction: December, 2012



AGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAG
TAGTTCGCCAGTTAATAGTTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCTGTTTGGTATGGCTTCATT
CAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGT
TGTCAGAAGTAAGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTGCATGCCATCCGTAAGATG
CTTTTCTGTGACTGGTGAAGTCCAGCCAGGACAGAAATGCCTCGACTTCGCTGCTACCCAAGGTTGCCGGGTGACGCACACCGTG
GAAACGGATGAAGGCACGAACCCAGTGGACATAAGCCTGTTTCGGTTTCGTAAGCTGTAATGCAAGTAGCGTATGCGCTCACGCAACTG
GTCCAGAACCTTGACCGAACGCAGCGGTGGTAACGGCGCAGTGGCGGTTTTTCATGGCTTGTATGACTGTTTTTTTTGGGGTACAGTC
TATGCCTCGGGCATCCAAGCAGCAAGCGCGTTACGCCGTGGGTGATGTTTGTATGTTATGGAGCAGCAACGATGTTACGCAGCAGGG
CAGTCGCCCTAAAACAAAGTTAAACATTATGAGGGAAGCGGTGATCGCCGAAGTATCGACTCAACTATCAGAGGTAGTTGGCGTCAT
CGAGCGCCATCTCGAACCGACGTTGCTGGCCGTACATTTGTACGGCTCCGCAGTGGATGGCGGCCTGAAGCCACACAGTGATATTGA
TTTGTCTGGTTACGGTGACCGTAAGGCTTGATGAAACAACCGGGCAGCTTTGATCAACGACCTTTTGGAAACTTCGGCTTCCCCTGG
AGAGATCCGAGATTCTCCGCGCTGTAGAAGTCAACATTGTTGTGACGACGACATCATTCCGTGGCGTTATCCAGCTAAGCCGCGAAT
CGAATTTGGAGAATGGCAGCGCAATGACATTTGCAAGTATCTTCGAGCCAGCCAGCATCGACATTTGATCGGCTATCTTGTCTGAC
AAAAGCAAGAGAACATAGCGTTGCCTTGGTAGGTTCCAGCGGCGGAGGAACCTTTGATCCGGTTCCTGAACAGGATCTATTTGAGGC
GCTAAATGAAACCTTAACGCTATGGAACCTCGCCCGGACTGGGCTGGCGATGAGCGAAATGTAGTGCTTACGTTGTCCCGCATTG
GTACAGCGCAGTAACCGGCAAAATCGCGCCGAAGGATGTGCTGCGGACTGGGCAATGGAGCGCCTGCCGGCCAGTATCAGCCCGT
CATACTTGAAGCTAGACAGGCTTATCTTGGACAAGAAGAAGATCGCTTGGCCTCGCGCGCAGATCAGTTGGAAGAATTTGTCCACTA
CGTGAAAGGCGAGATCACCAAGGTAGTCGGCAAAATAACCCTCGAGCCACCAATGACCAAAAATCCCTTAACGTGAGTTA

Unique enzymes in PBC2:

BsiI I	C`GTAC,G	51
Spl I	C`GTAC,G	51
Sfi I	GGCCN,NNN`NGGCC	504
Spe I	A`CTAG,T	512
Avr II	C`CTAG,G	835
Bbv II	GAAGAC 7/11	1048
Bbs I	GAAGAC 8/12	1049
PpuM I	RG`GWC,CY	1123
Nru I	TCG CGA	1195
BsaB I	GATNN NNATC	1262
Not I	GC`GGCC,GC	1652
Acc65 I	G`GTAC,C	2242
Asp718	G`GTAC,C	2242
Kpn I	G,GTAC`C	2246
Sca I	AGT ACT	2250
BamH I	G`GATC,C	2254
Asc I	GG`CGCG,CC	2261
Hpa I	GTT AAC	2270
Cla I	AT`CG,AT	2275
HinD III	A`AGCT,T	2280
Sac II	CC,GC`GG	2289
Pac I	TTA,AT`TAA	2296
Afe I	AGC GCT	2302
Eco47 III	AGC GCT	2302
Bgl II	A`GATC,T	2306
EcoR I	G`AATT,C	2312
Sal I	G`TCGA,C	2318
Acc I	GT`MK,AC	2319
BsrG I	T`GTAC,A	2324
Mlu I	A`CGCG,T	2330
Pme I	CTTT AAAC	2339
BsiC I	TT`CG,AA	2345
BstB I	TT`CG,AA	2345
Xba I	T`CTAG,A	2350
Swa I	ATTT AAAT	2371
EcoN I	CCTNN`N,NNAGG	2745
Bsp120 I	G`GGCC,C	2750
Apa I	G,GGCC`C	2754
BstX I	CCAN,NNNN`NTGG	2761
EcoR V	GAT ATC	3001
Sac I	G,AGCT`C	3192
Sap I	GCTCTTC 8/11	4013
Ear I	CTCTTC 7/10	4013
Ple I	GAGTC 9/10	4508
AlwN I	CAG,NNN`CTG	4545
HgiE II	ACCNNNNNNGGT -1/134708	
BspH I	T`CATG,A	4849
Ahd I	GACNN,N`NNGTC	5022
Fsp I	TGC GCA	5244
Psp1406 I	AA`CG,TT	5248
BstE II	G`GTNAC,C	6017
BspM I	ACCTGC 10/14	6204
PaeR7 I	C`TCGA,G	6653
Xho I	C`TCGA,G	6653

Number of enzymes = 54

PBC2: sites sorted by name:

Aat II	(4)	1776	1829	1912	2098
Acc I	(1)	2319			
Acc65 I	(1)	2242			
Aci I	(77)	315	336	348	370
		393	683	695	704
		716	726	737	783
		1083	1165	1232	1416
		1419	1485	1651	1655
		1709	1737	1749	1763
		1930	2021	2054	2158
		2179	2286	2288	2868
		2891	2913	2925	2946
		3130	3163	3197	3405
		3418	3567	3674	3679
		3727	3764	3819	3922
		3978	3988	4012	4055
		4062	4083	4174	4202
		4329	4348	4469	4579
		4714	4723	5085	5176
		5367	5413	5680	5700
		5868	5965	5977	6044
		6107	6303	6306	6384
		6431			
Afe I	(1)	2302			
Afl III	(4)	894	1390	2330	4129
Aha II	(6)	1461	1773	1826	1909
		2095	5911		
Ahd I	(1)	5022			
Alu I	(28)	16	799	853	863
		1066	1171	1535	2217
		2282	2556	3190	3316
		3359	3794	3889	3953
		4071	4297	4387	4433
		4690	5211	5311	5374
		5621	6051	6165	6537
Alw I	(18)	434	888	1278	1469
		1496	2232	2250	2261
		2828	3332	4691	4777
		4777	4874	4875	5339
		6316	6345		
AlwN I	(1)	4545			
Apa I	(1)	2754			
ApaL I	(2)	4443	6132		
Apo I	(6)	175	233	1570	2312
		2440	6600		
Asc I	(1)	2261			
Ase I	(6)	122	906	3665	3900
		3959	5194		
Asp718	(1)	2242			
Ava I	(9)	339	377	403	856
		2856	2882	2920	5749
		6653			
Ava II	(7)	355	1123	2905	5160
		5382	5656	6297	
Avr II	(1)	835			
BamH I	(1)	2254			
Ban I	(5)	1238	2116	2242	3873
		4970			
Ban II	(5)	347	1228	2754	2920
		3192			
Bbs I	(1)	1049			
Bbv I	(18)	25	337	340	398
		1075	1180	1544	2720
		2819	4548	4551	4757
		5451	5689	5774	5818
		5834	6206		
Bbv II	(1)	1048			
Bcl I	(2)	886	6055		

The following enzymes do not cut in PBC2:

Afl II	Age I	Bbe I	BsmB I	Bsp1286 I
Bst1107 I	Bsu36 I	Ehe I	Fse I	Kas I
Mun I	Nar I	Nhe I	PflM I	Tth111 I

Bcn I	(17)	341	342	405	406	Cfr10 I	(8)	382	1463	2877	3628
		858	859	1458	2576			3652	5102	6453	6506
		2725	2858	2859	2922	Cl a I	(1)	2275			
		2923	3762	4510	5206	Csp6 I	(16)	52	1869	1894	1949
		5553						1982	2033	2190	2243
Bfa I	(17)	17	28	318	513			2249	2325	2359	5503
		836	1073	1605	2304			5736	5949	5957	6440
		2351	2475	2943	3302	Dde I	(7)	795	1359	3204	4404
		3313	4624	4877	5212			4813	4979	6166	
		6538				Dpn I	(33)	429	883	888	1198
Bgl I	(6)	504	1741	1863	1934			1259	1273	1475	1491
		5142	6489					2238	2256	2308	2377
Bgl II	(1)	2306						2834	3327	4697	4772
Blp I	(2)	1359	6166					4783	4791	4869	4881
Bpm I	(4)	1463	1520	5092	6109			4986	5327	5345	5391
Bsa I	(2)	2570	5083					5874	6057	6237	6247
BsaA I	(7)	895	1393	1991	2358			6322	6340	6568	6589
		3039	3097	6614				6627			
BsaB I	(1)	1262				DpnII	(33)	427	881	886	1196
BsaH I	(6)	1461	1773	1826	1909			1257	1271	1473	1489
		2095	5911					2236	2254	2306	2375
BsaJ I	(38)	289	290	339	340			2832	3325	4695	4770
		403	476	502	547			4781	4789	4867	4879
		619	742	777	835			4984	5325	5343	5389
		856	962	1267	1374			5872	6055	6235	6245
		2011	2286	2574	2722			6320	6338	6566	6587
		2783	2856	2919	2920			6625			
		2969	2970	3437	3548	Dra I	(5)	2339	2371	2604	4888
		3868	4289	5542	5565			4907			
		5748	5779	6086	6150	Dra III	(4)	1369	5566	5994	6614
		6289	6631			Drd I	(3)	1051	3208	4237	
BsaW I	(9)	352	2239	2907	3575	Dsa I	(8)	502	742	962	2011
		3587	4335	4482	5313			2286	5565	5779	6150
		6323				Eae I	(9)	505	965	1080	1371
BseR I	(2)	831	1391					1652	3506	3968	5410
Bsg I	(2)	1151	3679					5944			
BsiC I	(1)	2345				Eag I	(2)	1080	1652		
BsiE I	(8)	1083	1199	1655	3134	Ear I	(1)	4013			
		4045	4469	5392	6238	Eco47 III	(1)	2302			
BsiHKA I	(3)	3192	4447	6136		Eco57 I	(3)	1060	4676	6002	
BsiW I	(1)	51				Eco72 I	(2)	895	1393		
Bsm I	(3)	1600	2470	3274		EcoN I	(1)	2745			
BsmA I	(4)	982	2084	2569	5084	EcoO109 I	(2)	1123	2750		
BsmF I	(17)	281	291	410	529	EcoR I	(1)	2312			
		601	665	1136	1472			289	475	547	602
		1826	1977	2145	2592	EcoR II	(20)	619	1266	1739	1932
		2675	2849	2968	2978			2653	2711	2783	2969
		6413						3547	3714	3867	4155
BsoF I	(57)	14	326	329	336			4276	4289	5509	6086
		387	454	783	1064	EcoR V	(1)	3001			
		1083	1157	1160	1163	Esp I	(2)	1359	6166		
		1166	1169	1333	1419	Fnu4H I	(57)	14	326	329	336
		1533	1652	1655	2709			387	454	783	1064
		2808	2875	2926	2933			1083	1157	1160	1163
		2936	3198	3317	3419			1166	1169	1333	1419
		3450	3453	3568	3680			1533	1652	1655	2709
		3727	3954	4035	4053			2808	2875	2926	2933
		4056	4174	4329	4472			2936	3198	3317	3419
		4537	4540	4746	5074			3450	3453	3568	3680
		5413	5440	5535	5678			3727	3954	4035	4053
		5763	5807	5823	5978			4056	4174	4329	4472
		6045	6195	6304	6384			4537	4540	4746	5074
		6481						5413	5440	5535	5678
Bspl20 I	(1)	2750						5763	5807	5823	5978
BspH I	(1)	4849						6045	6195	6304	6384
BspM I	(1)	6204						6481			
BspM II	(2)	3575	3587			Fok I	(19)	307	359	686	1015
Bsr I	(22)	721	1097	1121	1947			1250	1483	2573	2900
		2247	2255	2627	2737			2952	3454	3603	3735
		3558	3930	4536	4549			4988	5169	5456	5588
		4663	5069	5187	5230			5741	5985	6486	
		5497	5592	5657	6395	Fsp I	(1)	5244			
		6491	6513			Gdi II	(9)	506	1079	1081	1370
BsrB I	(4)	350	2913	3821	4062			1651	1653	3969	5409
BsrD I	(4)	5083	5257	6206	6499			5943			
BsrG I	(1)	2324				Gsu I	(4)	1464	1519	5093	6108
BssH II	(3)	2261	3768	6581		Hae I	(9)	498	834	967	3508
BssS I	(2)	1138	4302					3544	4144	4155	4607
BstB I	(1)	2345						6576			
BstE II	(1)	6017				Hae II	(10)	364	2304	2903	3366
BstN I	(20)	291	477	549	604			3685	4007	4377	5924
		621	1268	1741	1934			6354	6503		
		2655	2713	2785	2971	Hae III	(26)	498	507	776	782
		3549	3716	3869	4157			834	967	1082	1373
		4278	4291	5511	6088			1654	1735	1928	2752
BstU I	(23)	1195	1485	1711	2263			3508	3544	3970	4144
		2288	2332	3130	3236			4155	4173	4607	5065
		3407	3567	3770	3976			5145	5412	5946	5980
		3978	4176	4757	5087			6510	6576		
		5771	6044	6109	6172	Hga I	(10)	89	1042	1468	2176
		6465	6581	6583				3103	3266	4239	4817
BstX I	(1)	2761						5565	5901		
BstY I	(10)	881	1489	2236	2254	HgiA I	(3)	3192	4447	6136	
		2306	4770	4781	4867	HgiE II	(1)	4708			
		4879	6338			Hha I	(37)	363	1063	1485	2263
Cac8 I	(39)	333	384	391	467			2265	2303	2902	3238
		562	581	634	653			3365	3608	3684	3770
		1059	1173	1465	1737			3772	3913	3978	4006
		1930	2263	2796	2872			4039	4309	4376	4476
		2879	2930	3177	3274			4650	4759	5152	5245
		3361	3515	3766	3770			5644	5694	5771	5923
		3922	3951	4060	4146			6111	6172	6199	6353
		4183	4743	5134	5767			6447	6467	6502	6583
		5944	6049	6229	6398			6585			
		6504	6508	6583		Hinc II	(4)	900	2270	2320	2651

