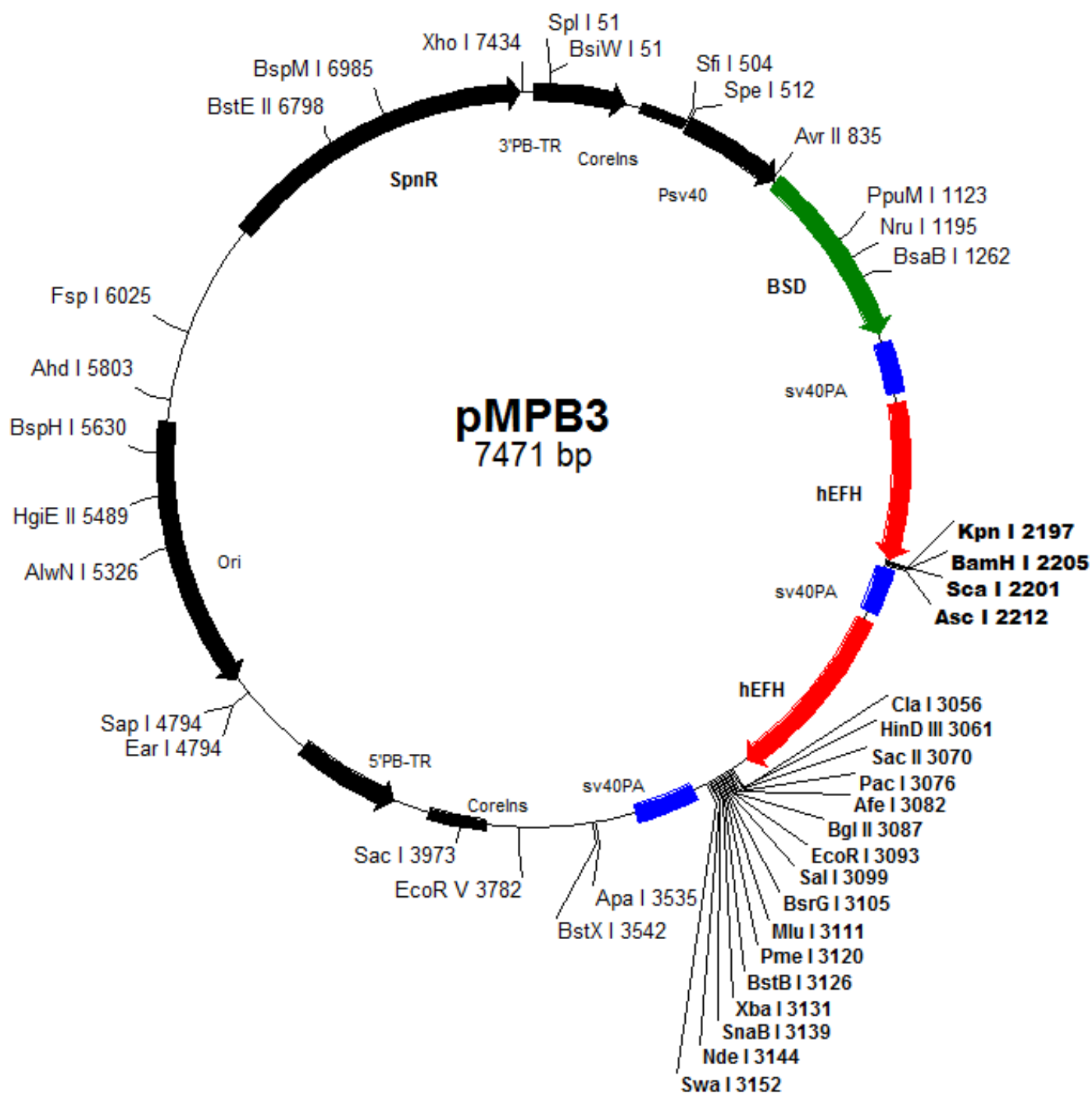


Vector: pMPB3 (modified PiggyBac vector; two expression cassettes)

Antibiotic Selection: Spectinomycin or Blasticin-resistant

Creator(s): Xiang (Sean) Chen, MD, PhD, Molecular Oncology Lab of The University of Chicago

Date of Construction: February, 2012



pMPB3 Vector Sequence (aka pMPB2a)

(Spectinomycin or Blastacin-resistant)

CTGCAGAACACGCAGCTAGATTAACTCTAGAAAAGATAATCAATTTGTGACGTACGTTAAAGATAATCAATGCGTAAAATTGACGCATG
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TGTCAGTTAGGGTGTGGAAAGTCCCAGGCTCCCAGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCAGGTGT
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 TGAAAGGCGAGATCACCAAGGTAGTCGGCAAAATAACCCTCGAGCCACCAATGACCAAAATCCCTTAACGTGAGTTA

Unique enzymes in pMPB3:

BsiW I	C`GTAC,G	51	BsiC I	TT`CG,AA	3126
Spl I	C`GTAC,G	51	BstB I	TT`CG,AA	3126
Sfi I	GGCCN,NNN`NGGCC	504	Xba I	T`CTAG,A	3131
Spe I	A`CTAG,T	512	SnaB I	TAC GTA	3139
Avr II	C`CTAG,G	835	Nde I	CA`TA,TG	3144
Bbv II	GAAGAC 7/11	1048	Bsp120 I	G`GGCC,C	3531
Bbs I	GAAGAC 8/12	1049	Apa I	G,GGCC`C	3535
PpuM I	RG`GWC,CY	1123	BstX I	CCAN,NNNN`NTGG	3542
Nru I	TCG CGA	1195	EcoR V	GAT ATC	3782
BsaB I	GATNN NNATC	1262	Sac I	G,AGCT`C	3973
Acc65 I	G`GTAC,C	2193	Sap I	GCTCTTC 8/11	4794
Asp718	G`GTAC,C	2193	Ear I	CTCTTC 7/10	4794
Kpn I	G,GTAC`C	2197	AlwN I	CAG,NNN`CTG	5326
Sca I	AGT ACT	2201	HgiE II	ACCNNNNNNGGT -1/135489	
BamH I	G`GATC,C	2205	BspH I	T`CATG,A	5630
Asc I	GG`CGCG,CC	2212	Ahd I	GACNN,N`NNGTC	5803
Cla I	AT`CG,AT	3056	Fsp I	TGC GCA	6025
HinD III	A`AGCT,T	3061	BstE II	G`GTNAC,C	6798
Sac II	CC,GC`GG	3070	BspM I	ACCTGC 10/14	6985
Eco47 III	AGC GCT	3083	Paer7 I	C`TCGA,G	7434
Bgl II	A`GATC,T	3087	Xho I	C`TCGA,G	7434
EcoR I	G`AATT,C	3093		Number of enzymes = 48	
Sal I	G`TCGA,C	3099			
Acc I	GT`MK,AC	3100			
BsrG I	T`GTAC,A	3105			
Mlu I	A`CGCG,T	3111			
Pme I	CTTT AAAC	3120			

The following enzymes do not cut in pMPB3:

Aat II	Afl II	BsmB I	Bsp1286 I	Bst1107 I
Fse I	Hpa I	PflM I	Tth111 I	Xca I

pMPB3 sites sorted by name:

Acc I	(1)	3100				4455	4460	4508	4545		
Acc65 I	(1)	2193				4600	4703	4759	4769		
Aci I	(91)	315	336	348	370	4793	4836	4843	4864		
		393	683	695	704	4955	4983	5110	5129		
		716	726	737	783	5250	5360	5495	5504		
		1083	1165	1232	1416	5866	5957	6148	6194		
		1419	1485	1651	1655	6461	6481	6649	6746		
		1756	1793	1873	1929	6758	6825	6888	7084		
		1932	1947	1978	1985	7087	7165	7212			
		2012	2278	2281	2347						
		2513	2517	2618	2655	Afl III	(5)	894	1390	2252	3111
		2735	2791	2794	2809						
		2840	2847	2874	3067	Age I	(2)	1734	2596		
		3069	3649	3672	3694	Aha II	(5)	1461	2185	2323	3047
		3706	3727	3911	3944			6692			
		3978	4186	4199	4348	Ahd I	(1)	5803			
						Alu I	(38)	16	799	853	863

		1066	1171	1535	1886								
		1892	1896	2034	2175	BsiW I	(1)	51					
		2397	2748	2754	2758	Bsm I	(4)	1600	2462	3251	4055		
		2896	3037	3063	3337	BsmA I	(5)	982	2038	2900	3350		
		3971	4097	4140	4575			5865					
		4670	4734	4852	5078	BsmF I	(17)	281	291	410	529		
		5168	5214	5471	5992			601	665	1136	1472		
		6092	6155	6402	6832			1683	2334	2545	3373		
		6946	7318					3456	3630	3749	3759		
Alw I	(21)	434	888	1278	1469	BsoF I	(69)	7194					
		1496	2163	2201	2212			14	326	329	336		
		2331	2358	3025	3609			387	454	783	1064		
		4113	5472	5558	5558			1083	1157	1160	1163		
		5655	5656	6120	7097			1166	1169	1333	1419		
		7126						1533	1652	1655	1873		
AlwN I	(1)	5326						1932	1947	1978	2281		
Apa I	(1)	3535						2395	2514	2517	2735		
ApaL I	(2)	5224	6913					2794	2809	2840	3490		
Apo I	(7)	175	233	1570	2432			3589	3656	3707	3714		
		3093	3221	7381				3717	3979	4098	4200		
Asc I	(1)	2212						4231	4234	4349	4461		
Ase I	(6)	122	906	4446	4681			4508	4735	4816	4834		
		4740	5975					4837	4955	5110	5253		
Asp718	(1)	2193						5318	5321	5527	5855		
Ava I	(13)	339	377	403	856			6194	6221	6316	6459		
		1701	1803	2563	2665			6544	6588	6604	6759		
		3637	3663	3701	6530			6826	6976	7085	7165		
		7434						7262					
Ava II	(7)	355	1123	3686	5941	Bsp120 I	(1)	3531					
		6163	6437	7078		BspH I	(1)	5630					
Avr II	(1)	835				BspM I	(1)	6985					
BamH I	(1)	2205				BspM II	(2)	4356	4368				
Ban I	(12)	1238	1662	1737	1993	Bsr I	(25)	721	1097	1121	1769		
		2184	2193	2524	2599			1790	2198	2206	2631		
		2855	3046	4654	5751			2652	3408	3518	4339		
Ban II	(7)	347	1228	1908	2770			4711	5317	5330	5444		
		3535	3701	3973				5850	5968	6011	6278		
Bbe I	(2)	2188	3050					6373	6438	7176	7272		
Bbs I	(1)	1049						7294					
Bbv I	(19)	25	337	340	398	BsrB I	(6)	350	1657	2519	3694		
		1075	1180	1544	2406			4602	4843				
		3501	3600	5329	5332	BsrD I	(4)	5864	6038	6987	7280		
		5538	6232	6470	6555	BsrG I	(1)	3105					
		6599	6615	6987		BssH II	(3)	2212	4549	7362			
Bbv II	(1)	1048				BssS I	(2)	1138	5083				
Bcl I	(2)	886	6836			BstB I	(1)	3126					
Bcn I	(20)	341	342	405	406	BstE II	(1)	6798					
		858	859	1458	2049	BstN I	(18)	291	477	549	604		
		2320	2911	3357	3506			621	1268	3436	3494		
		3639	3640	3703	3704			3566	3752	4330	4497		
		4543	5291	5987	6334			4650	4938	5059	5072		
Bfa I	(26)	17	28	318	513			6292	6869				
		836	1073	1605	1742	BstU I	(29)	1195	1485	1756	1925		
		1893	2019	2081	2467			1970	2214	2347	2618		
		2604	2755	2881	2943			2787	2832	3069	3113		
		3085	3132	3256	3724			3911	4017	4188	4348		
		4083	4094	5405	5658			4551	4757	4759	4957		
		5993	7319					5538	5868	6552	6825		
Bgl I	(3)	504	5923	7270				6890	6953	7246	7362		
Bgl II	(1)	3087						7364					
Blp I	(2)	1359	6947			BstX I	(1)	3542					
Bpm I	(6)	1463	1520	2325	2382	BstY I	(12)	881	1489	2167	2205		
		5873	6890					2351	3029	3087	5551		
Bsa I	(4)	2037	2899	3351	5864			5562	5648	5660	7119		
BsaA I	(7)	895	1393	2255	3139	Bsu36 I	(2)	1941	2803				
		3820	3878	7395		Cac8 I	(48)	333	384	391	467		
BsaB I	(1)	1262						562	581	634	653		
BsaH I	(5)	1461	2185	2323	3047			1059	1173	1465	1894		
		6692						1908	1929	2092	2120		
BsaJ I	(42)	289	290	339	340			2214	2327	2756	2770		
		403	476	502	547			2791	2954	2982	3577		
		619	742	777	835			3653	3660	3711	3958		
		856	962	1267	1374			4055	4142	4296	4547		
		1804	2068	2236	2666			4551	4703	4732	4841		
		2930	3067	3355	3503			4927	4964	5524	5915		
		3564	3637	3700	3701			6548	6725	6830	7010		
		3750	3751	4218	4329			7179	7285	7289	7364		
		4649	5070	6323	6346	Cfr10 I	(17)	382	1463	1734	1958		
		6529	6560	6867	6931			2090	2181	2325	2596		
		7070	7412					2820	2952	3043	3658		
BsaW I	(12)	352	1659	1734	2521			4409	4433	5883	7234		
		2596	3688	4356	4368			7287					
		5116	5263	6094	7104	Cla I	(1)	3056					
BseR I	(3)	831	1391	2253		Csp6 I	(12)	52	1784	2194	2200		
Bsg I	(4)	1151	1852	2714	4460			2646	3106	3140	6284		
BsiC I	(1)	3126						6517	6730	6738	7221		
BsiE I	(9)	1083	1199	1655	2517								
		3915	4826	5250	6173	Dde I	(13)	795	1359	1941	2035		
		7019						2086	2803	2897	2948		
BsiHKA I	(3)	3973	5228	6917				3985	5185	5594	5760		
								6947					
						Dpn I	(36)	429	883	888	1198		

		1259	1273	1475	1491		Hga I	(12)	89	1042	1468	1998
		2169	2207	2337	2353				2330	2860	3884	4047
		3031	3089	3158	3615				5020	5598	6346	6682
		4108	5478	5553	5564		HgiA I	(3)	3973	5228	6917	
		5572	5650	5662	5767		HgiE II	(1)	5489			
		6108	6126	6172	6655		Hha I	(50)	363	1063	1485	1684
		6838	7018	7028	7103				1756	1927	2064	2159
		7121	7349	7370	7408				2187	2214	2216	2347
DpnII	(36)	427	881	886	1196				2546	2618	2789	2926
		1257	1271	1473	1489				3021	3049	3084	3683
		2167	2205	2335	2351				4019	4146	4389	4465
		3029	3087	3156	3613				4551	4553	4694	4759
		4106	5476	5551	5562				4787	4820	5090	5157
		5570	5648	5660	5765				5257	5431	5540	5933
		6106	6124	6170	6653				6026	6425	6475	6552
		6836	7016	7026	7101				6704	6892	6953	6980
		7119	7347	7368	7406				7134	7228	7248	7283
Dra I	(7)	2030	2892	3120	3152				7364	7366		
		3385	5669	5688			HinC II	(3)	900	3101	3432	
Dra III	(5)	1369	2231	6347	6775		Hind II	(3)	900	3101	3432	
		7395					Hind III	(1)	3061			
Drd I	(3)	1051	3989	5018			Hinf I	(23)	988	1320	1409	1446
Dsa I	(7)	502	742	962	3067				1965	2084	2271	2308
		6346	6560	6931					2827	2946	3128	3306
Eae I	(11)	505	965	1080	1371				3518	3904	4012	4273
		1652	2233	2514	4287				4745	4810	4885	5281
		4749	6191	6725					5798	6669	6882	
Eag I	(3)	1080	1652	2514			HinI I	(5)	1461	2185	2323	3047
Ear I	(1)	4794							6692			
Eco47 III	(1)	3083					HinP I	(50)	361	1061	1483	1682
Eco57 I	(5)	1060	1907	2769	5457				1754	1925	2062	2157
		6783							2185	2212	2214	2345
Eco72 I	(3)	895	1393	2255					2544	2616	2787	2924
EcoN I	(5)	1745	1940	2607	2802				3019	3047	3082	3681
		3526							4017	4144	4387	4463
EcoO109 I	(2)	1123	3531						4549	4551	4692	4757
EcoR I	(1)	3093							4785	4818	5088	5155
EcoR II	(18)	289	475	547	602				5255	5429	5538	5931
		619	1266	3434	3492				6024	6423	6473	6550
		3564	3750	4328	4495				6702	6890	6951	6978
		4648	4936	5057	5070				7132	7226	7246	7281
		6290	6867						7362	7364		
EcoR V	(1)	3782					Hpa II	(51)	340	353	358	383
Ehe I	(2)	2186	3048						404	857	1456	1464
Esp I	(2)	1359	6947						1660	1735	1959	2047
Fnu4H I	(69)	14	326	329	336				2059	2091	2182	2209
		387	454	783	1064				2318	2326	2522	2597
		1083	1157	1160	1163				2821	2909	2921	2953
		1166	1169	1333	1419				3044	3355	3505	3638
		1533	1652	1655	1873				3659	3684	3689	3702
		1932	1947	1978	2281				4357	4369	4410	4420
		2395	2514	2517	2735				4434	4542	4628	5117
		2794	2809	2840	3490				5264	5290	5480	5884
		3589	3656	3707	3714				5918	5985	6095	6332
		3717	3979	4098	4200				7105	7235	7288	
		4231	4234	4349	4461		Hph I	(10)	959	4318	5647	5874
		4508	4735	4816	4834				6288	6346	6662	6809
		4837	4955	5110	5253				6895	7402		
		5318	5321	5527	5855							
		6194	6221	6316	6459		Kas I	(2)	2184	3046		
		6544	6588	6604	6759		Kpn I	(1)	2197			
		6826	6976	7085	7165		Mae I	(26)	17	28	318	513
		7262							836	1073	1605	1742
Fok I	(22)	307	359	686	1015				1893	2019	2081	2467
		1250	1483	1937	2345				2604	2755	2881	2943
		2799	3354	3681	3733				3085	3132	3256	3724
		4235	4384	4516	5769				4083	4094	5405	5658
		5950	6237	6369	6522				5993	7319		
		6766	7267				Mae II	(23)	50	54	304	894
Fsp I	(1)	6025							1392	1849	2132	2254
Gdi II	(12)	506	1079	1081	1370				2711	2994	3138	3738
		1651	1653	2232	2513				3819	3877	4242	4259
		2515	4750	6190	6724				4476	5613	6029	6718
Gsu I	(6)	1464	1519	2326	2381		Mae III	(28)	7204	7394	7463	
		5874	6889						46	248	1544	2161
Hae I	(9)	498	834	967	4289				2177	2406	3023	3039
		4325	4925	4936	5388				3195	3873	3933	4536
		7357							5266	5329	5445	5728
Hae II	(14)	364	2065	2188	2927				6059	6117	6270	6335
		3050	3085	3684	4147				6466	6553	6597	6792
		4466	4788	5158	6705				6798	6900	7230	7468
		7135	7284				Mbo I	(36)	427	881	886	1196
Hae III	(30)	498	507	776	782				1257	1271	1473	1489
		834	967	1082	1373				2167	2205	2335	2351
		1654	1946	2051	2235				3029	3087	3156	3613
		2516	2808	2913	3533				4106	5476	5551	5562
		4289	4325	4751	4925				5570	5648	5660	5765
		4936	4954	5388	5846				6106	6124	6170	6653
		5926	6193	6727	6761				6836	7016	7026	7101
		7291	7357						7119	7347	7368	7406
							Mbo II	(14)	231	996	1053	1081

		1499	2361	4177	4782			4289	4325	4751	4925
		5571	5644	6994	7353			4936	4954	5388	5846
		7356	7389					5926	6193	6727	6761
Mlu I	(1)	3111						7291	7357		
Mme I	(3)	5124	5308	7356		Ple I	(3)	1973	2835	5289	
Mnl I	(57)	103	258	318	446	Pme I	(1)	3120			
		508	766	772	795	Pml I	(3)	895	1393	2255	
		801	809	812	824	PpuM I	(1)	1123			
		944	1005	1346	1347	Psp1406 I	(3)	1849	2711	6029	
		1369	1486	1710	1799	PspA I	(5)	339	403	856	3637
		1894	1936	1990	2006			3701			
		2231	2348	2572	2661	Pst I	(3)	6	471	3577	
		2756	2798	2852	2868	Pvu I	(3)	1199	6173	7019	
		3465	3598	3726	3970	Pvu II	(4)	1171	1886	2748	4734
		4156	4183	4213	4477	Rsa I	(12)	53	1785	2195	2201
		4759	4808	5018	5091			2647	3107	3141	6285
		5342	5742	5823	5969			6518	6731	6739	7222
		6175	6314	6538	6635	Rsr II	(2)	355	3686		
		6675	7083	7122	7367	Sac I	(1)	3973			
		7442				Sac II	(1)	3070			
Msc I	(2)	967	4289			Sal I	(1)	3099			
Mse I	(31)	22	57	122	138	Sap I	(1)	4794			
		212	906	2029	2891	Sau3A I	(36)	427	881	886	1196
		3073	3077	3119	3151			1257	1271	1473	1489
		3377	3384	3861	3868			2167	2205	2335	2351
		4089	4302	4446	4681			3029	3087	3156	3613
		4740	5616	5668	5673			4106	5476	5551	5562
		5687	5740	5975	6014			5570	5648	5660	5765
		6631	7147	7460				6106	6124	6170	6653
Msl I	(4)	3540	6055	6214	6910			6836	7016	7026	7101
Msp I	(51)	340	353	358	383			7119	7347	7368	7406
		404	857	1456	1464	Sau96 I	(14)	355	1123	2049	2911
		1660	1735	1959	2047			3531	3532	3686	5845
		2059	2091	2182	2209			5924	5941	6163	6437
		2318	2326	2522	2597			7078	7290		
		2821	2909	2921	2953	Sca I	(1)	2201			
		3044	3355	3505	3638	ScrF I	(38)	291	340	341	404
		3659	3684	3689	3702			405	477	549	604
		4357	4369	4410	4420			621	857	858	1268
		4434	4542	4628	5117			1457	2048	2319	2910
		5264	5290	5480	5884			3356	3436	3494	3505
		5918	5985	6095	6332			3566	3638	3639	3702
		7105	7235	7288				3703	3752	4330	4497
MspAl I	(10)	1171	1886	2748	3069			4542	4650	4938	5059
		4455	4734	5252	5497			5072	5290	5986	6292
		6461	7084					6333	6869		
Mun I	(2)	1727	2589			Sec I	(42)	289	290	339	340
Nae I	(7)	384	1465	2092	2327			403	476	502	547
		2954	3660	7289				619	742	777	835
Nar I	(2)	2185	3047					856	962	1267	1374
Nci I	(20)	340	341	404	405			1804	2068	2236	2666
		857	858	1457	2048			2930	3067	3355	3503
		2319	2910	3356	3505			3564	3637	3700	3701
		3638	3639	3702	3703			3750	3751	4218	4329
		4542	5290	5986	6333			4649	5070	6323	6346
Nco I	(2)	742	962					6529	6560	6867	6931
Nde I	(1)	3144						7070	7412		
Ngom I	(7)	382	1463	2090	2325	SfaN I	(21)	380	591	663	1036
		2952	3658	7287				1093	1225	1271	1571
Nhe I	(2)	1892	2754					1918	2433	2780	3222
Nla III	(27)	71	88	583	655			3660	4108	4163	4397
		746	966	1498	1646			4495	5006	6058	6251
		2360	2508	3297	3834			6543			
		3894	4057	4206	4270	Sfc I	(8)	2	467	1047	3573
		4294	4524	4568	4914			5175	5366	6044	6893
		5634	6125	6135	6213						
		6249	6492	7448		Sfi I	(1)	504			
Nla IV	(30)	346	553	625	1124	Sma I	(5)	341	405	858	3639
		1240	1664	1739	1791			3703			
		1995	2074	2186	2195	SnaB I	(1)	3139			
		2207	2526	2601	2653	Spe I	(1)	512			
		2857	2936	3048	3533	Sph I	(3)	583	655	4057	
		3698	4656	4942	4981	SpI I	(1)	51			
		5753	5847	5888	6099	Srf I	(2)	405	3639		
		6744	7109			Ssp I	(2)	3381	4041		
Not I	(2)	1652	2514			Stu I	(2)	498	834		
Nru I	(1)	1195				Sty I	(8)	742	835	962	2068
Nsi I	(3)	585	657	4055				2930	6323	7070	7412
Nsp7524 I	(5)	84	579	651	4053	Taq I	(20)	108	1256	1407	1899
		4910						2041	2269	2761	2903
NspB II	(10)	1171	1886	2748	3069			3056	3100	3126	5010
		4455	4734	5252	5497			6307	6567	6667	6698
		6461	7084					6710	7004	7019	7435
NspH I	(5)	88	583	655	4057	Tfi I	(13)	988	1320	1409	1446
		4914						2271	2308	3128	3518
PaeR7 I	(1)	7434						4012	4273	4745	4885
Pal I	(30)	498	507	776	782			6882			
		834	967	1082	1373	Tsp45 I	(10)	46	2177	3039	3873
		1654	1946	2051	2235			3933	6059	6270	6335
		2516	2808	2913	3533			6798	6900		
						Tth111 II	(9)	198	2108	2970	3968

		5499	5508	5538	6555
		6562			
Vsp I	(6)	122	906	4446	4681
		4740	5975		
Xba I	(1)	3131			
Xho I	(1)	7434			
Xho II	(12)	881	1489	2167	2205
		2351	3029	3087	5551

		5562	5648	5660	7119
Xma I	(5)	339	403	856	3637
		3701			
Xma III	(3)	1080	1652	2514	

Site usage in pMPB3:

Xca I	GTA TAC	-	Xcm I	CCANNNN,N`NNNTGG-
Xho I	C`TCGA,G	1	Xho II	R`GATC,Y
Xma I	C`CCGG,G	5	Xma III	C`GGCC,G
				3

Aat II	G,ACGT`C	-	Acc I	GT`MK,AC	1
Acc65 I	G`GTAC,C	1	Aci I	C`CG,C	91
Afl II	C`TTAA,G	-	Afl III	A`CRYG,T	5
Age I	A`CCGG,T	2	Aha II	GR`CG,YC	5
Ahd I	GACNN,N`NNGTC	1	Alu I	AG CT	38
Alw I	GGATC 8/9	21	AlwN I	CAG,NNN`CTG	1
Apa I	G,GGCC`C	1	ApaL I	G`TGCA,C	2
Apo I	R`AATT,Y	7	Asc I	GG`CGCG,CC	1
Ase I	AT`TA,AT	6	Asp718	G`GTAC,C	1
Ava I	C`YCGR,G	13	Ava II	G`GWC,C	7
Avr II	C`CTAG,G	1	BamH I	G`GATC,C	1
Ban I	G`GYRC,C	12	Ban II	G,RCGY`C	7
Bbe I	G,GGCC`C	2	Bbs I	GAAGAC 8/12	1
Bbv I	GCAGC 13/17	19	Bbv II	GAAGAC 7/11	1
Bcl I	T`GATC,A	2	Bcn I	CC,S`GG	20
Bfa I	C`TA,G	26	Bgl I	GCCN,NNN`NGGC	3
Bgl II	A`GATC,T	1	Blp I	GC`TNA,GC	2
Bpm I	CTGGAG 22/20	6	Bsa I	GGTCTC 7/11	4
BsaA I	YAC GTR	7	BsaB I	GATNN NNATC	1
BsaH I	GR`CG,YC	5	BsaJ I	C`CNGG,G	42
BsaW I	W`CCGG,W	12	BseR I	GAGGAG 16/14	3
Bsg I	GTGCAG 22/20	4	BsiC I	TT`CG,AA	1
BsiE I	CG,RY`CG	9	BsiHKA I	G,WGCW`C	3
BsiW I	C`GTAC,G	1	Bsm I	GAATG,C 7	4
BsmA I	GTCTC`/9	5	BsmB I	CGTCTC 7/11	-
BsmF I	GGGAC 15/19	17	BsoF I	GC`N,GC	69
Bsp120 I	G`GGCC,C	1	Bsp1286 I	G,DGCH`C	-
BspH I	T`CATG,A	1	BspM I	ACCTGC 10/14	1
BspM II	T`CCGG,A	2	Bsr I	ACT,GG`	25
BsrB I	GAG CGG	6	BsrD I	GCAATG, 8	4
BsrG I	T`GTAC,A	1	BssH II	G`CGCG,C	3
BssS I	C`TCGT,G	2	Bst1107 I	GTA TAC	-
BstB I	TT`CG,AA	1	BstE II	G`GTNAC,C	1
BstN I	CC`W,GG	18	BstU I	CG CG	29
BstX I	CCAN,NNNN`NTGG	1	BstY I	R`GATC,Y	12
Bsu36 I	CC`TNA,GG	2	Cac8 I	GCN NGC	48
Cfr10 I	R`CCGG,Y	17	Clf I	AT`CG,AT	1
Csp6 I	G`TA,C	12	Dde I	C`TNA,G	13
Dpn I	GA TC	36	DpnII	`GATC,	36
Dra I	TTT AAA	7	Dra III	CAC,NNN`GTG	5
Drd I	GACNN,NN`NNGTC	3	Dsa I	C`CRYG,G	7
Eae I	Y`GGCC,R	11	Eag I	C`GGCC,G	3
Ear I	CTCTTC 7/10	1	Eco47 III	AGC GCT	1
Eco57 I	CTGAAG 21/19	5	Eco72 I	CAC GTG	3
EcoN I	CCTNN`N,NNAGG	5	EcoO109 I	RG`GNC,CY	2
EcoR I	G`AATT,C	1	EcoR II	`CCWGG,	18
EcoR V	GAT ATC	1	Ehe I	GGC GCC	2
Esp I	GC`TNA,GC	2	Fnu4H I	GC`N,GC	69
Fok I	GGATG 14/18	22	Fse I	GG,CCGG`CC	-
Fsp I	TGC GCA	1	Gdi II	`YGGC,CG	12
Gsu I	CTGGAG 21/19	6	Hae I	WGG CCW	9
Hae II	R,GGCC`Y	14	Hae III	GG CC	30
Hga I	GACGC 9/14	12	HgiA I	G,WGCW`C	3
HgiE II	ACCNNNNNNGGT -1/131		Hha I	G,CG`C	50
Hinc II	GTY RAC	3	Hind II	GTY RAC	3
Hind III	A`AGCT,T	1	Hinf I	G`ANT,C	23
HinI I	GR`CG,YC	5	HinP I	G`CG,C	50
Hpa I	GTT AAC	-	Hpa II	C`CG,G	51
Hph I	GGTGA 12/11	10	Kas I	G`GCGC,C	2
Kpn I	G,GTAC`C	1	Mae I	C`TA,G	26
Mae II	A`CG,T	23	Mae III	`GTNAC,	28
Mbo I	`GATC,	36	Mbo II	GAAGA 12/11	14
Mlu I	A`CGCG,T	1	Mme I	TCCRAC 25/23	3
Mnl I	CCTC 10/10	57	Msc I	TGG CCA	2
Mse I	T`TA,A	31	Msl I	CAYNN NNRTG	4
Msp I	C`CG,G	51	MspAl I	CMG CKG	10
Mun I	C`AATT,G	2	Nae I	GCC GGC	7
Nar I	GG`CG,CC	2	Nci I	CC`S,GG	20
Nco I	C`CATG,G	2	Nde I	CA`TA,TG	1
NgoM I	G`CCGG,C	7	Nhe I	G`CTAG,C	2
Nla III	,CATG`	27	Nla IV	GGN NCC	30
Not I	GC`GGCC,GC	2	Nru I	TCG CGA	1
Nsi I	A,TGCA`T	3	Nsp7524 I	R`CATG,Y	5
NspB II	CMG CKG	10	NspH I	R,CATG`Y	5
Paer7 I	C`TCGA,G	1	Pal I	GG CC	30
PflM I	CCAN,NNN`NTGG	-	Ple I	GAGTC 9/10	3
Pme I	CTTT AAAC	1	Pml I	CAC GTG	3
PpuM I	RG`GWC,CY	1	Psp1406 I	AA`CG,TT	3
PspA I	C`CCGG,G	5	Pst I	C,TGCA`G	3
Pvu I	CG,AT`CG	3	Pvu II	CAG CTG	4
Rsa I	GT AC	12	Rsr II	CG`GWC,CG	2
Sac I	G,AGCT`C	1	Sac II	CC,GC`GG	1
Sal I	G`TCGA,C	1	Sap I	GCTCTTC 8/11	1
Sau3A I	`GATC,	36	Sau96 I	G`GNC,C	14
Sca I	AGT ACT	1	ScrF I	CC`N,GG	38
Sec I	C`CNNG,G	42	SfaN I	GCATC 9/13	21
Sfc I	C`TRYA,G	8	Sfi I	GGCCN,NNN`NGGCC	1
Sma I	CCC GGG	5	SnaB I	TAC GTA	1
Spe I	A`CTAG,T	1	Sph I	G,CATG`C	3
SpI I	C`GTAC,G	1	Srf I	GCCC GGGC	2
Ssp I	AAT ATT	2	Stu I	AGG CCT	2
Sty I	C`CWGG,G	8	Taq I	T`CG,A	20
Tfi I	G`AWT,C	13	Tsp45 I	`GTSAC,	10
Tth111 I	GACN`N,NGTC	-	Tth111 II	CAARCA 16/14	9
Vsp I	AT`TA,AT	6	Xba I	T`CTAG,A	1