

pKFP-Red-mito vector

Table of restriction sites

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
AanI	TTA!TAA	2	1544; 1749
AarI	CACCTGCNNNN!	1	1231
AarI	!NNNNNNNNGCAGGTG	0	
AasI	GACNNNN!NNGTC	3	1832; 2788; 4577
AatI	AGG!CCT	1	2582
AatII	GACGT!C	4	125; 178; 261; 447
AbsI	CC!TCGAGG	0	
AccI	GT!MKAC	0	
AccII	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
AccIII	T!CCGGA	0	
Acc16I	TGC!GCA	1	2863
Acc36I	ACCTGCNNNN!	3	1224; 3029; 3479
Acc36I	!NNNNNNNNGCAGGT	1	2648
Acc65I	G!GTACC	0	
AccB1I	G!GYRCC	7	465; 753; 813; 1207; 1914; 2760; 2795
AccB7I	CCANNNN!NTGG	1	680
AccBSI	CCG!CTC	3	1240; 2185; 3374
AccBSI	GAG!CGG	3	1404; 2021; 3428
AceIII	CAGCTCNNNNNNN!	1	1717
AceIII	!NNNNNNNNNNGAGCTG	1	552
AciI	C!CGC	44	58; 86; 98; 112; 279; 507; 589; 612; 660; 1012; 1084; 1118; 1238; 1252; 1258; 1295; 1351; 1361; 1375; 1408; 2076; 2079; 2093; 2183; 2431; 2443; 2452; 2464; 2474; 2485; 2531; 2670; 2733; 3235; 3280; 3346; 3372; 3497; 3500; 3648; 3780; 4087; 4231; 4727
AciI	G!CGG	30	370; 403; 528; 623; 647; 847; 1000; 1168; 1201; 1404; 2021; 2048; 2136; 2246; 2827; 2891; 2992; 2995; 3275; 3330; 3428; 3566; 3713; 3853; 4096; 4341; 4462; 4481; 4608; 4636
AcI	AA!CGTT	0	
AcIWI	GGATCNNNN!	8	694; 2629; 2940; 3186; 3578; 3937; 4035; 4121
AcIWI	!NNNNNGATCC	8	580; 665; 681; 1058; 3005; 3549; 3936; 4033
AcoI	Y!GGCCR	9	764; 1115; 1169; 1202; 1405; 2667; 2841; 3232; 3259
AcsI	R!AATY	3	1575; 1679; 1690
AcuI	CTGAAGNNNNNNNNNNNNNNNN!	4	1209; 1284; 2907; 3339
AcuI	!NNNNNNNNNNNNNNCTTCAG	1	4137
AcvI	CAC!GTG	0	
AcyI	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
AdeI	CACNNN!GTG	1	1877
AfaI	GT!AC	12	219; 244; 299; 332; 383; 540; 894; 918; 1053; 1146; 1344; 3067
AfeI	AGC!GCT	0	
AfiI	CCNNNNN!NNGG	21	49; 680; 809; 1089; 1204; 1286; 1773; 2099; 2491; 2742; 3286; 3567; 3599; 3731; 3766; 3816; 3848; 4201; 4480; 4646; 4664
AfIII	C!TTAAG	1	1643
AfIII	A!CRYGT	2	919; 4679
AgeI	A!CCGGT	1	692
AgsI	TTS!AA	8	737; 776; 944; 2172; 2216; 2226; 2639; 4215
AhdI	GACNNN!NNGTC	0	
AhlI	A!CTAGT	0	
AjiI	CAC!GTC	0	
AjiI	GAC!GTG	0	
AjnI	!CCWGG	17	88; 281; 817; 969; 1018; 1030; 1045; 1066; 2295; 2350; 2367; 3146; 3725; 3828; 4518; 4531; 4652
AjuI	GAANNNNNNNTTGGNNNNNNNNNN!	0	
AjuI	!NNNNNNCCAANNNNNNNTTC	0	
AjuI	CCAANNNNNNNTTCNNNNNNNNNN!	0	

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
AjuI	!NNNNNNNGAANNNNNNNTTGG	0	
AleI	CACNN!NNGTG	0	
AlfI	GCANNNNNTGCNNNNNNNNNNNN!	2	2335; 2407
AlfI	!NNNNNNNNNNGCANNNNNTGC	2	2301; 2373
AloI	GAACNNNNNTCCNNNNNNNNNNNN!	1	1843
AloI	!NNNNNNNGGANNNNNNGTTC	0	
AloI	GGANNNNNGTTCNNNNNNNNNNNN!	0	
AloI	!NNNNNNNGAACNNNNNTCC	1	1811
AluI	AG!CT	13	566; 1388; 1540; 1707; 1964; 2259; 2547; 2867; 3325; 4122; 4379; 4425; 4515
AluBI	AG!CT	13	566; 1388; 1540; 1707; 1964; 2259; 2547; 2867; 3325; 4122; 4379; 4425; 4515
AlwI	GGATCNNNN!	8	694; 2629; 2940; 3186; 3578; 3937; 4035; 4121
AlwI	!NNNNNGATCC	8	580; 665; 681; 1058; 3005; 3549; 3936; 4033
Alw21I	GWGCW!C	3	2874; 3064; 4369
Alw26I	GTCTCN!	1	434
Alw26I	!NNNNNGAGAC	5	717; 2185; 2603; 3622; 3750
Alw44I	G!TGCAC	1	4365
AlwNI	CAGNNN!CTG	3	1178; 3862; 4270
Ama87I	C!YCGRG	1	957
Aor13HI	T!CCGGA	0	
Aor51HI	AGC!GCT	0	
ApaI	GGGCC!C	0	
ApaBI	GCANNNNN!TGC	3	2329; 2401; 3863
ApaLI	G!TGCAC	1	4365
ApeKI	G!CWGC	17	614; 617; 620; 1163; 1537; 2056; 2721; 2822; 2864; 2905; 2998; 3385; 3838; 4064; 4270; 4273; 4338
ApoI	R!AATTY	3	1575; 1679; 1690
ApyPI	ATCGACNNNNNNNNNNNNNNNNNNNN!	1	3276
ApyPI	!NNNNNNNNNNNNNNNNNNGTCGAT	3	3070; 3723; 4561
AquII	GCCGNACNNNNNNNNNNNNNNNNNNNN!	1	3160
AquII	!NNNNNNNNNNNNNNNNNNGTNCGGC	2	874; 904
AquIII	GAGGAGNNNNNNNNNNNNNNNNNNNN!	2	1336; 2589
AquIII	!NNNNNNNNNNNNNNNNNNCTCCTC	0	
AquIV	GRGGAAGNNNNNNNNNNNNNNNNNNNN!	0	
AquIV	!NNNNNNNNNNNNNNNNNCTCCYC	3	935; 1061; 3331
ArsI	GACNNNNNTTYGNNNNNNNNNNNN!	0	
ArsI	!NNNNNCCRAANNNNNGTC	0	
ArsI	CRAANNNNNGTCNNNNNNNNNNNN!	0	
ArsI	!NNNNNNNGACNNNNNTTYG	0	
AscI	GG!CGGCC	0	
AseI	AT!TAAT	1	7
Asi256I	G!ATC	25	586; 671; 687; 830; 839; 1064; 1139; 1304; 1419; 2599; 2603; 2622; 2933; 3011; 3092; 3101; 3179; 3555; 3571; 3930; 3942; 4020; 4028; 4039; 4114
AsiGI	A!CCGGT	1	692
AsiSI	GCGAT!CGC	0	
AspI	GACN!NNGTC	1	2879
Asp700I	GAANN!NNTTC	0	
Asp718I	G!GTACC	0	
AspA2I	C!CTAGG	2	2583; 3598
AspEI	GACNNN!NNGTC	0	
AspLEI	GCG!C	24	664; 666; 979; 1168; 2027; 2035; 2061; 2083; 2092; 2105; 2136; 2755; 2763; 2827; 2864; 3130; 3390; 3566; 3652; 4055; 4164; 4338; 4438; 4505
AspS9I	G!GNCC	15	83; 276; 641; 849; 1092; 1184; 1289; 1358; 1391; 1868; 3277; 3722; 3768; 3826; 3859
AssI	AGT!ACT	0	
AsuII	TT!CGAA	1	3443
AsuC2I	CC!SGG	8	644; 1129; 1198; 1273; 2765; 2925; 3538; 4302
AsuHPI	GGTGANNNNNNNN!	5	376; 848; 1070; 3832; 3948
AsuHPI	!NNNNNNNTCACC	3	959; 1878; 2939
AsuNHI	G!CTAGC	1	591
AvaI	C!YCGRG	1	957
AvaII	G!GWCC	3	1289; 3277; 3722
AviII	TGC!GCA	1	2863

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AvrII	C!CTAGG	2	2583; 3598
AxyI	CC!TNAGG	2	2241; 3873
BaeI	ACNNNNGTAYCNNNNNNNNNNNN!	0	
BaeI	!NNNNNNNGRTACNNNNNGT	0	
BaeI	GRTACNNNNGTNNNNNNNNNNNNNN!	0	
BaeI	!NNNNNNNNNACNNNNNGTAYC	0	
BaeGI	GKGCMI!C	6	756; 816; 1197; 2707; 2800; 4369
BalI	TGG!CCA	1	2843
BamHI	G!GATCC	1	686
BanI	G!GYRCC	7	465; 753; 813; 1207; 1914; 2760; 2795
BanII	GRGCY!C	4	1129; 1952; 3126; 3836
BanIII	AT!CGAT	1	2601
BarI	GAAGNNNNNTACNNNNNNNNNNNN!	0	
BarI	!NNNNNNNGTANNNNNNCTTC	0	
BarI	GTANNNNNNCTTCNNNNNNNNNNNN!	0	
BarI	!NNNNNNNGAAGNNNNNNNTAC	0	
BasI	CCANNNN!NTGG	1	680
BauI	C!ACGAG	2	3479; 4506
BauI	C!TCGTG	1	3353
BbeI	GGCGC!C	1	2764
Bbr7I	GAAGACNNNNNNN!	0	
Bbr7I	!NNNNNNNNNNNGTCTTC	0	
BbrPI	CAC!GTG	0	
BbsI	GAAGACNN!	0	
BbsI	!NNNNNNGTCTTC	0	
BbuI	GCATG!C	3	2331; 2403; 3166
BbvI	GCAGCNNNNNNNNN!	6	1549; 2834; 2876; 3397; 3850; 4350
BbvI	!NNNNNNNNNNNGCTGC	8	601; 1150; 2043; 2708; 2892; 2985; 4051; 4257
Bbv12I	GWGCW!C	3	2874; 3064; 4369
BbvCI	CC!TCAGC	0	
BbvCI	GC!TGAGG	0	
BccI	CCATCNNNN!	5	753; 1891; 2455; 2981; 3483
BccI	!NNNNNGATGG	4	1175; 1859; 2639; 3067
BceAI	ACGGCNNNNNNNNNNNN!	8	779; 911; 1013; 1052; 1106; 1172; 3187; 3674
BceAI	!NNNNNNNNNNNNNGCCGT	4	1338; 1902; 2720; 4179
Bcefl	ACGGCNNNNNNNNNNNN!	8	779; 911; 1013; 1052; 1106; 1172; 3187; 3674
Bcefl	!NNNNNNNNNNNNNGCCGT	4	1339; 1903; 2721; 4180
BcgI	CGANNNNNNTGCNNNNNNNNNNNN!	0	
BcgI	!NNNNNNNNNNNGCANNNNNNNTCG	1	788
BcgI	GCANNNNNNTCGNNNNNNNNNNNN!	1	822
BcgI	!NNNNNNNNNNNCGANNNNNNTGC	0	
BciVI	GTATCCNNNNNN!	3	2190; 2980; 4481
BciVI	!NNNNNGGATAC	0	
BclI	T!GATCA	0	
BcnI	CC!SGG	8	644; 1129; 1198; 1273; 2765; 2925; 3538; 4302
BcuI	A!CTAGT	0	
BdaI	TGANNNNNNTCANNNNNNNNNNN!	1	4614
BdaI	!NNNNNNNNNNNTGANNNNNNTCA	1	4580
BfaI	C!TAG	8	592; 1416; 1610; 2028; 2584; 3599; 3933; 4186
BfiI	ACTGGGNNNNN!	1	2710
BfiI	!NNNNCCCAGT	3	289; 648; 2462
BfmI	C!TRYAG	3	2096; 4223; 4414
BfoI	RGCGC!Y	4	2028; 2036; 2764; 4439
BfrI	C!TTAAG	1	1643
BfuI	GTATCCNNNNNN!	3	2190; 2980; 4481
BfuI	!NNNNNGGATAC	0	
BfuAI	ACCTGCNNNN!	3	1224; 3029; 3479
BfuAI	!NNNNNNNNNGCAGGT	1	2648
BfuCI	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
BglI	GCCNNNN!NGGC	6	90; 212; 283; 705; 1201; 2536
BglII	A!GATCT	0	

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BisI	GC!NGC	43	612; 615; 618; 621; 648; 660; 848; 1001; 1118; 1164; 1169; 1202; 1351; 1361; 1375; 1408; 1538; 2057; 2079; 2093; 2531; 2670; 2722; 2733; 2823; 2828; 2865; 2906; 2993; 2999; 3235; 3331; 3372; 3386; 3500; 3839; 3854; 4065; 4271; 4274; 4339; 4482; 4637
BlnI	C!CTAGG	2	2583; 3598
BlpI	GC!TNAGC	0	
BlsI	GCN!GC	43	613; 616; 619; 622; 649; 661; 849; 1002; 1119; 1165; 1170; 1203; 1352; 1362; 1376; 1409; 1539; 2058; 2080; 2094; 2532; 2671; 2723; 2734; 2824; 2829; 2866; 2907; 2994; 3000; 3236; 3332; 3373; 3387; 3501; 3840; 3855; 4066; 4272; 4275; 4340; 4483; 4638
BmcAI	AGT!ACT	0	
Bme18I	G!GWCC	3	1289; 3277; 3722
Bme1390I	CC!NGG	25	90; 283; 644; 819; 971; 1020; 1032; 1047; 1068; 1129; 1198; 1273; 2297; 2352; 2369; 2765; 2925; 3148; 3538; 3727; 3830; 4302; 4520; 4533; 4654
BmeRI	GACNNN!NNGTC	0	
BmeT110I	C!YCGRG	1	957
BmgBI	CAC!GTC	0	
BmgBI	GAC!GTG	0	
BmgT120I	GG!NCC	15	84; 277; 642; 850; 1093; 1185; 1290; 1359; 1392; 1869; 3278; 3723; 3769; 3827; 3860
BmiI	GGN!NCC	24	467; 651; 688; 755; 815; 851; 899; 1094; 1126; 1133; 1209; 1916; 1937; 1949; 2140; 2301; 2373; 2762; 2797; 3645; 3724; 3769; 4612; 4651
BmrI	ACTGGGNNNNN!	1	2710
BmrI	!NNNNCCCAGT	3	289; 648; 2462
BmrFI	CC!NGG	25	90; 283; 644; 819; 971; 1020; 1032; 1047; 1068; 1129; 1198; 1273; 2297; 2352; 2369; 2765; 2925; 3148; 3538; 3727; 3830; 4302; 4520; 4533; 4654
BmsI	GCATCNNNNN!	9	790; 937; 1306; 1577; 2340; 2412; 3060; 3124; 3399
BmsI	!NNNNNNNNNGATGC	7	357; 1090; 1258; 2719; 2974; 3190; 4582
BmtI	GCTAG!C	1	595
BmuI	ACTGGGNNNNN!	1	2710
BmuI	!NNNNCCCAGT	3	289; 648; 2462
BoxI	GACNN!NNGTC	0	
BpiI	GAAGACNN!	0	
BpiI	!NNNNNNGTCTTC	0	
BpI	GAGNNNNNCTCNNNNNNNNNNNN!	2	2550; 3449
BpI	!NNNNNNNNNGAGNNNNNNCTC	2	2518; 3417
BpmI	CTGGAGNNNNNNNNNNNNNNNN!	1	3601
BpmI	!NNNNNNNNNNNNNNNCTCCAG	1	3544
Bpu10I	CC!TNAGC	0	
Bpu10I	GC!TNAGG	0	
Bpu14I	TT!CGAA	1	3443
Bpu1102I	GC!TNAGC	0	
BpuAI	GAAGACNN!	0	
BpuAI	!NNNNNNGTCTTC	0	
BpuEI	CTTGAGNNNNNNNNNNNNNNNN!	2	4055; 4594
BpuEI	!NNNNNNNNNNNNNNNCTCAAG	2	3137; 4296
BpuMI	CC!SGG	8	644; 1129; 1198; 1273; 2765; 2925; 3538; 4302
BpvUI	CGAT!CG	0	
BsaI	GGTCTCN!	0	
BsaI	!NNNNNGAGACC	2	717; 3750
Bsa29I	AT!CGAT	1	2601
BsaAI	YAC!GTR	4	340; 920; 1877; 3065
BsaBI	GATNN!NNATC	3	828; 1423; 2620
BsaHI	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
BsaJI	C!CNNGG	23	360; 703; 817; 958; 970; 1030; 1067; 1196; 1354; 2295; 2367; 2490; 2525; 2534; 2583; 2924; 3193; 3598; 3725; 3726; 3828; 3829; 4519
BsaMI	GAATGCN!	1	1512
BsaMI	G!CATTC	1	1605
BsaWI	W!CCGGW	5	692; 2792; 3636; 4326; 4473
BsaXI	ACNNNNNCTCCNNNNNNNNNN!	1	1841
BsaXI	!NNNNNNNGGAGNNNNNNGT	0	

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BsaXI	GGAGNNNNNGTNNNNNNNNNNNN!	0	
BsaXI	!NNNNNNNNNACNNNNNCTCC	1	1811
BsbI	CAACACNNNNNNNNNNNNNNNNNN!	0	
BsbI	!NNNNNNNNNNNNNNNNNNNGTGTG	2	1762; 3669
Bsc4I	CCNNNNN!NNGG	21	49; 680; 809; 1089; 1204; 1286; 1773; 2099; 2491; 2742; 3286; 3567; 3599; 3731; 3766; 3816; 3848; 4201; 4480; 4646; 4664
BscAI	GCATCNNNN!	9	789; 936; 1305; 1576; 2339; 2411; 3059; 3123; 3398
BscAI	!NNNNNNGATGC	7	360; 1093; 1261; 2722; 2977; 3193; 4585
BseI	ACTGGN!	3	2705; 2906; 4152
BseI	C!CAGT	7	295; 654; 1172; 1790; 2468; 4264; 4277
Bse8I	GATNN!NNATC	3	828; 1423; 2620
Bse21I	CC!TNAGG	2	2241; 3873
Bse118I	R!CCGGY	6	692; 1204; 1978; 3080; 3261; 3544
BseAI	T!CCGGA	0	
BseBI	CC!WGG	17	90; 283; 819; 971; 1020; 1032; 1047; 1068; 2297; 2352; 2369; 3148; 3727; 3830; 4520; 4533; 4654
BseCI	AT!CGAT	1	2601
BseDI	C!CNNGG	23	360; 703; 817; 958; 970; 1030; 1067; 1196; 1354; 2295; 2367; 2490; 2525; 2534; 2583; 2924; 3193; 3598; 3725; 3726; 3828; 3829; 4519
Bse3DI	GCAATGNN!	1	2994
Bse3DI	!CATTGC	0	
BseGI	GGATGNN!	4	2621; 3078; 3103; 3557
BseGI	!CATCC	3	871; 928; 2447
BseJI	GATNN!NNATC	3	828; 1423; 2620
BseLI	CCNNNNN!NNGG	21	49; 680; 809; 1089; 1204; 1286; 1773; 2099; 2491; 2742; 3286; 3567; 3599; 3731; 3766; 3816; 3848; 4201; 4480; 4646; 4664
BseMI	GCAATGNN!	1	2994
BseMI	!CATTGC	0	
BseMII	CTCAGNNNNNNNNNN!	1	3887
BseMII	!NNNNNNNNCTGAG	6	1391; 2232; 2534; 3415; 3987; 4396
BseNI	ACTGGN!	3	2705; 2906; 4152
BseNI	C!CAGT	7	295; 654; 1172; 1790; 2468; 4264; 4277
BsePI	G!CGCGC	1	662
BseRI	GAGGAGNNNNNNNNNN!	2	1326; 2579
BseRI	!NNNNNNNNCTCCTC	0	
BseSI	GKGCMI!C	6	756; 816; 1197; 2707; 2800; 4369
BseXI	GCAGCNNNNNNNN!	6	1549; 2834; 2876; 3397; 3850; 4350
BseXI	!NNNNNNNNNNNGCTGC	8	601; 1150; 2043; 2708; 2892; 2985; 4051; 4257
BseX3I	C!GGCCG	4	1115; 1202; 1405; 2667
BseYI	C!CCAGC	3	2304; 2376; 4375
BseYI	G!CTGGG	3	1120; 1388; 3265
BsgI	GTGCAGNNNNNNNNNNNNNNNN!	0	
BsgI	!NNNNNNNNNNNNNNCTGCAC	1	1209
Bsh1236I	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
Bsh1285I	CGRY!CG	6	697; 1118; 1205; 1408; 2670; 4345
BshFI	GG!CC	32	84; 277; 642; 708; 766; 850; 1093; 1117; 1171; 1185; 1204; 1350; 1360; 1393; 1407; 1727; 1869; 2524; 2530; 2539; 2582; 2669; 2843; 3234; 3261; 3770; 3827; 3860; 4205; 4639; 4657; 4668
BshNI	G!GYRCC	7	465; 753; 813; 1207; 1914; 2760; 2795
BshTI	A!CCGGT	1	692
BshVI	AT!CGAT	1	2601
BsiEI	CGRY!CG	6	697; 1118; 1205; 1408; 2670; 4345
BsiHKAI	GWGCW!C	3	2874; 3064; 4369
BsiHKCI	C!YCGRG	1	957
BsiSI	C!CGG	23	644; 693; 925; 1129; 1198; 1205; 1273; 1979; 2666; 2743; 2765; 2793; 2924; 3014; 3081; 3262; 3537; 3545; 3637; 4111; 4301; 4327; 4474
BsiWI	C!GTACG	0	
BsII	CCNNNNN!NNGG	21	49; 680; 809; 1089; 1204; 1286; 1773; 2099; 2491; 2742; 3286; 3567; 3599; 3731; 3766; 3816; 3848; 4201; 4480; 4646; 4664
BsIFI	GGGACNNNNNNNNNN!	6	175; 326; 494; 2912; 3444; 3553
BsIFI	!NNNNNNNNNNNNNGTCCC	5	1160; 2277; 2349; 2413; 3708
BsmI	GAATGCN!	1	1512

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BsmI	G!CATTC	1	1605
BsmAI	GTCTCN!	1	434
BsmAI	!NNNNNGAGAC	5	717; 2185; 2603; 3622; 3750
BsmBI	CGTCTCN!	0	
BsmBI	!NNNNNGAGACG	0	
BsmFI	GGGACNNNNNNNNNN!	6	175; 326; 494; 2912; 3444; 3553
BsmFI	!NNNNNNNNNNNNNGTCCC	5	1160; 2277; 2349; 2413; 3708
BsnI	GG!CC	32	84; 277; 642; 708; 766; 850; 1093; 1117; 1171; 1185; 1204; 1350; 1360; 1393; 1407; 1727; 1869; 2524; 2530; 2539; 2582; 2669; 2843; 3234; 3261; 3770; 3827; 3860; 4205; 4639; 4657; 4668
Bso31I	GGTCTCN!	0	
Bso31I	!NNNNNGAGACC	2	717; 3750
BsoBI	C!YCGRG	1	957
Bsp13I	T!CCGGA	0	
Bsp19I	C!CATGG	4	360; 703; 2490; 3193
Bsp24I	GACNNNNNTGGNNNNNNNNNN!	2	289; 3564
Bsp24I	!NNNNNNCCANNNNNGTC	3	861; 3985; 4163
Bsp24I	CCANNNNNGTCNNNNNNNNNN!	3	893; 4017; 4195
Bsp24I	!NNNNNNNGACNNNNNTGG	2	257; 3532
Bsp68I	TCG!CGA	0	
Bsp119I	TT!CGAA	1	3443
Bsp120I	G!GGCCC	0	
Bsp143I	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
Bsp1286I	GDGCH!C	12	756; 816; 1129; 1197; 1952; 2707; 2800; 2874; 3064; 3126; 3836; 4369
Bsp1407I	T!GTACA	1	1051
Bsp1720I	GC!TNAGC	0	
BspACI	C!CGC	44	58; 86; 98; 112; 279; 507; 589; 612; 660; 1012; 1084; 1118; 1238; 1252; 1258; 1295; 1351; 1361; 1375; 1408; 2076; 2079; 2093; 2183; 2431; 2443; 2452; 2464; 2474; 2485; 2531; 2670; 2733; 3235; 3280; 3346; 3372; 3497; 3500; 3648; 3780; 4087; 4231; 4727
BspACI	G!CGG	30	370; 403; 528; 623; 647; 847; 1000; 1168; 1201; 1404; 2021; 2048; 2136; 2246; 2827; 2891; 2992; 2995; 3275; 3330; 3428; 3566; 3713; 3853; 4096; 4341; 4462; 4481; 4608; 4636
BspCNI	CTCAGNNNNNNNN!	1	3886
BspCNI	!NNNNNNCTGAG	6	1392; 2233; 2535; 3416; 3988; 4397
BspDI	AT!CGAT	1	2601
BspD6I	GACTCNNNN!	5	418; 1420; 1834; 3440; 4317
BspD6I	!NNNNNGAGTC	2	1797; 2229
BspEI	T!CCGGA	0	
BspFNI	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
BspHI	T!CATGA	2	2187; 3959
BspLI	GGN!NCC	24	467; 651; 688; 755; 815; 851; 899; 1094; 1126; 1133; 1209; 1916; 1937; 1949; 2140; 2301; 2373; 2762; 2797; 3645; 3724; 3769; 4612; 4651
BspMI	ACCTGCNNNN!	3	1224; 3029; 3479
BspMI	!NNNNNNNGCAGGT	1	2648
BspOI	GCTAG!C	1	595
BspPI	GGATCNNNN!	8	694; 2629; 2940; 3186; 3578; 3937; 4035; 4121
BspPI	!NNNNNGATCC	8	580; 665; 681; 1058; 3005; 3549; 3936; 4033
BspQI	GCTCTCN!	0	
BspQI	!NNNNGAAGAGC	2	3105; 3315
BspTI	C!TTAAG	1	1643
BspT104I	TT!CGAA	1	3443
BspT107I	G!GYRCC	7	465; 753; 813; 1207; 1914; 2760; 2795
BspTNI	GGTCTCN!	0	
BspTNI	!NNNNNGAGACC	2	717; 3750
BsrI	ACTGGN!	3	2705; 2906; 4152
BsrI	C!CAGT	7	295; 654; 1172; 1790; 2468; 4264; 4277
BsrBI	CCG!CTC	3	1240; 2185; 3374
BsrBI	GAG!CGG	3	1404; 2021; 3428
BsrDI	GCAATGNN!	1	2994

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
BsrDI	!CATTGC	0	
BsrFI	R!CCGGY	6	692; 1204; 1978; 3080; 3261; 3544
BsrGI	T!GTACA	1	1051
BsrSI	ACTGGN!	3	2705; 2906; 4152
BsrSI	C!CAGT	7	295; 654; 1172; 1790; 2468; 4264; 4277
BssAI	R!CCGGY	6	692; 1204; 1978; 3080; 3261; 3544
BssECI	C!CNNGG	23	360; 703; 817; 958; 970; 1030; 1067; 1196; 1354; 2295; 2367; 2490; 2525; 2534; 2583; 2924; 3193; 3598; 3725; 3726; 3828; 3829; 4519
BssHII	G!CGCGC	1	662
BssKI	!CCNGG	25	88; 281; 642; 817; 969; 1018; 1030; 1045; 1066; 1127; 1196; 1271; 2295; 2350; 2367; 2763; 2923; 3146; 3536; 3725; 3828; 4300; 4518; 4531; 4652
BssMI	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
BssNI	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
BssNAI	GTA!TAC	0	
BssSI	C!ACGAG	2	3479; 4506
BssSI	C!TCGTG	1	3353
BssTII	C!CWWGG	6	360; 703; 2490; 2583; 3193; 3598
Bst6I	CTCTTCN!	0	
Bst6I	!NNNNGAAGAG	3	2228; 3105; 3315
Bst98I	C!TTAAG	1	1643
Bst1107I	GTA!TAC	0	
BstACI	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
BstAFI	C!TTAAG	1	1643
BstAPI	GCANNNN!NTGC	3	2328; 2400; 3862
BstAUI	T!GTACA	1	1051
BstBI	TT!CGAA	1	3443
Bst2BI	C!ACGAG	2	3479; 4506
Bst2BI	C!TCGTG	1	3353
BstBAI	YAC!GTR	4	340; 920; 1877; 3065
Bst4CI	ACN!GT	14	76; 198; 269; 543; 581; 758; 1852; 3141; 3257; 3365; 3688; 4179; 4649; 4720
BstC8I	GCN!NGC	31	86; 279; 593; 664; 1161; 1206; 1252; 1980; 2023; 2037; 2310; 2329; 2382; 2401; 2655; 2841; 3060; 3126; 3132; 3164; 3205; 3209; 3263; 3546; 3733; 3780; 3836; 3858; 4069; 4629; 4666
BstDEI	C!TNAG	7	1400; 2241; 2543; 3424; 3873; 3996; 4405
BstDSI	C!CRYGG	5	360; 703; 1354; 2490; 3193
BstEII	G!GTNACC	0	
BstENI	CCTNN!NNNAGG	0	
BstF5I	GGATGNN!	4	2621; 3078; 3103; 3557
BstF5I	!CATCC	3	871; 928; 2447
BstFNI	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
BstH2I	RGCGC!Y	4	2028; 2036; 2764; 4439
BstHHI	GCG!C	24	664; 666; 979; 1168; 2027; 2035; 2061; 2083; 2092; 2105; 2136; 2755; 2763; 2827; 2864; 3130; 3390; 3566; 3652; 4055; 4164; 4338; 4438; 4505
BstKTI	GAT!C	25	588; 673; 689; 832; 841; 1066; 1141; 1306; 1421; 2601; 2605; 2624; 2935; 3013; 3094; 3103; 3181; 3557; 3573; 3932; 3944; 4022; 4030; 4041; 4116
BstMAI	GTCTCN!	1	434
BstMAI	!NNNNGAGAC	5	717; 2185; 2603; 3622; 3750
BstMBI	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
BstMCI	CGRY!CG	6	697; 1118; 1205; 1408; 2670; 4345
BstMWI	GCNNNNN!NNGC	34	90; 212; 244; 283; 376; 400; 617; 634; 656; 705; 778; 895; 1165; 1201; 1366; 1988; 2018; 2045; 2087; 2328; 2400; 2451; 2530; 2752; 2836; 2859; 2998; 3121; 3204; 3471; 3658; 3862; 4061; 4633
BstNI	CC!WGG	17	90; 283; 819; 971; 1020; 1032; 1047; 1068; 2297; 2352; 2369; 3148; 3727; 3830; 4520; 4533; 4654
BstNSI	RCATG!Y	6	599; 893; 2331; 2403; 3166; 4683

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
BstOI	CC!WGG	17	90; 283; 819; 971; 1020; 1032; 1047; 1068; 2297; 2352; 2369; 3148; 3727; 3830; 4520; 4533; 4654
BstPI	G!GTNACC	0	
BstPAI	GACNN!NNGTC	0	
BstSCI	!CCNGG	25	88; 281; 642; 817; 969; 1018; 1030; 1045; 1066; 1127; 1196; 1271; 2295; 2350; 2367; 2763; 2923; 3146; 3536; 3725; 3828; 4300; 4518; 4531; 4652
BstSFI	C!TRYAG	3	2096; 4223; 4414
BstSLI	GKGCMLC	6	756; 816; 1197; 2707; 2800; 4369
BstSNI	TAC!GTA	1	340
BstUI	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
Bst2UI	CC!WGG	17	90; 283; 819; 971; 1020; 1032; 1047; 1068; 2297; 2352; 2369; 3148; 3727; 3830; 4520; 4533; 4654
BstV1I	GCAGCNNNNNNN!	6	1549; 2834; 2876; 3397; 3850; 4350
BstV1I	!NNNNNNNNNNNGCTGC	8	601; 1150; 2043; 2708; 2892; 2985; 4051; 4257
BstV2I	GAAGACNN!	0	
BstV2I	!NNNNNGTCTTC	0	
BstXI	CCANNNNN!NTGG	0	
BstX2I	R!GATCY	11	585; 670; 686; 1063; 2932; 3178; 3570; 3929; 3941; 4027; 4038
BstYI	R!GATCY	11	585; 670; 686; 1063; 2932; 3178; 3570; 3929; 3941; 4027; 4038
BstZI	C!GGCCG	4	1115; 1202; 1405; 2667
BstZ17I	GTA!TAC	0	
BsuI	GTATCCNNNNNN!	3	2190; 2980; 4481
BsuI	!NNNNNGGATAC	0	
Bsu15I	AT!CGAT	1	2601
Bsu36I	CC!TNAGG	2	2241; 3873
BsuRI	GG!CC	32	84; 277; 642; 708; 766; 850; 1093; 1117; 1171; 1185; 1204; 1350; 1360; 1393; 1407; 1727; 1869; 2524; 2530; 2539; 2582; 2669; 2843; 3234; 3261; 3770; 3827; 3860; 4205; 4639; 4657; 4668
BsuTUI	AT!CGAT	1	2601
BtgI	C!CRYGG	5	360; 703; 1354; 2490; 3193
BtgZI	GCGATGNNNNNNNNNN!	2	1878; 3213
BtgZI	!NNNNNNNNNNNNNNCATCGC	3	334; 3032; 3376
BthCI	GCNG!C	43	614; 617; 620; 623; 650; 662; 850; 1003; 1120; 1166; 1171; 1204; 1353; 1363; 1377; 1410; 1540; 2059; 2081; 2095; 2533; 2672; 2724; 2735; 2825; 2830; 2867; 2908; 2995; 3001; 3237; 3333; 3374; 3388; 3502; 3841; 3856; 4067; 4273; 4276; 4341; 4484; 4639
BtrI	CAC!GTC	0	
BtrI	GAC!GTG	0	
BtsI	GCAGTGNN!	0	
BtsI	!CACTGC	2	767; 1600
BtsCI	GGATGNN!	4	2621; 3078; 3103; 3557
BtsCI	!CATCC	3	871; 928; 2447
BtuMI	TCG!CGA	0	
BveI	ACCTGCNNNN!	3	1224; 3029; 3479
BveI	!NNNNNNNNGCAGGT	1	2648
Cac8I	GCN!NGC	31	86; 279; 593; 664; 1161; 1206; 1252; 1980; 2023; 2037; 2310; 2329; 2382; 2401; 2655; 2841; 3060; 3126; 3132; 3164; 3205; 3209; 3263; 3546; 3733; 3780; 3836; 3858; 4069; 4629; 4666
CaiI	CAGNNN!CTG	3	1178; 3862; 4270
CciI	T!CATGA	2	2187; 3959
CciNI	GC!GGCCGC	1	1405
CdiI	CATC!G	8	352; 749; 785; 1301; 3050; 3055; 3253; 3394
CdiI	C!GATG	2	1864; 3199
CdpI	GCGGAGNNNNNNNNNNNNNNNNNNNN!	1	4633
CdpI	!NNNNNNNNNNNNNNNNNNNNCTCCGC	4	486; 1237; 2422; 2464
CelII	GC!TNAGC	0	
CfoI	GCG!C	24	664; 666; 979; 1168; 2027; 2035; 2061; 2083; 2092; 2105; 2136; 2755; 2763; 2827; 2864; 3130; 3390; 3566; 3652; 4055; 4164; 4338; 4438; 4505
CfrI	Y!GGCCR	9	764; 1115; 1169; 1202; 1405; 2667; 2841; 3232; 3259
Cfr9I	C!CCGGG	0	
Cfr10I	R!CCGGY	6	692; 1204; 1978; 3080; 3261; 3544

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
Cfr13I	G!GNCC	15	83; 276; 641; 849; 1092; 1184; 1289; 1358; 1391; 1868; 3277; 3722; 3768; 3826; 3859
Cfr42I	CCGCG!GG	0	
ChaI	GATC!	25	589; 674; 690; 833; 842; 1067; 1142; 1307; 1422; 2602; 2606; 2625; 2936; 3014; 3095; 3104; 3182; 3558; 3574; 3933; 3945; 4023; 4031; 4042; 4117
CjeI	CCANNNNNNGTNNNNNNNNNNNNNNN!	5	894; 2578; 4018; 4118; 4196
CjeI	!NNNNNNNNNACNNNNNNNTGG	7	64; 257; 2245; 2340; 3532; 4082; 4637
CjeI	ACNNNNNNTGGNNNNNNNNNNNNNN!	7	98; 291; 2279; 2374; 3566; 4116; 4671
CjeI	!NNNNNNNNCCANNNNNNGT	5	860; 2544; 3984; 4084; 4162
CjePI	CCANNNNNNNTCNNNNNNNNNNNNNN!	4	894; 1044; 4018; 4196
CjePI	!NNNNNNNNGANNNNNNNTGG	3	257; 3532; 4131
CjePI	GANNNNNNTGGNNNNNNNNNNNNNN!	3	290; 3565; 4164
CjePI	!NNNNNNNCCANNNNNNNTC	4	861; 1011; 3985; 4163
Clal	AT!CGAT	1	2601
CpoI	CG!GWCCG	1	3277
CseI	GACGCNNNNN!	5	526; 617; 1380; 3471; 3550
CseI	!NNNNNNNNNNGCGTC	3	2094; 3989; 4567
CsiI	A!CCWGGT	1	2350
CspI	CG!GWCCG	1	3277
Csp6I	G!TAC	12	218; 243; 298; 331; 382; 539; 893; 917; 1052; 1145; 1343; 3066
Csp45I	TT!CGAA	1	3443
CspAI	A!CCGGT	1	692
CspCI	CAANNNNNGTGGNNNNNNNNNNNN!	1	411
CspCI	!NNNNNNNNNCCACNNNNNTTG	0	
CspCI	CCACNNNNNTTGGNNNNNNNNNNNN!	0	
CspCI	!NNNNNNNNNNCAANNNNNGTGG	1	376
CstMI	AAGGAGNNNNNNNNNNNNNNNNNN!	2	2041; 3650
CstMI	!NNNNNNNNNNNNNNNNNCTCCTT	0	
CviAII	C!ATG	20	301; 361; 596; 704; 728; 890; 1307; 2188; 2328; 2400; 2491; 2632; 2977; 3163; 3194; 3220; 3576; 3960; 4680; 4731
CviJI	RG!CY	94	42; 84; 93; 277; 566; 628; 637; 642; 650; 708; 766; 850; 898; 964; 1003; 1093; 1117; 1127; 1171; 1185; 1204; 1250; 1276; 1350; 1360; 1388; 1393; 1407; 1430; 1540; 1707; 1727; 1869; 1950; 1964; 1978; 2259; 2300; 2372; 2495; 2524; 2530; 2539; 2547; 2570; 2582; 2588; 2669; 2686; 2694; 2721; 2746; 2830; 2839; 2843; 2867; 2905; 2981; 2998; 3017; 3080; 3124; 3134; 3151; 3234; 3261; 3265; 3302; 3325; 3341; 3521; 3548; 3609; 3731; 3770; 3827; 3834; 3841; 3860; 3871; 4122; 4151; 4194; 4205; 4270; 4349; 4374; 4379; 4425; 4515; 4613; 4639; 4657; 4668
CviKI-1	RG!CY	94	42; 84; 93; 277; 566; 628; 637; 642; 650; 708; 766; 850; 898; 964; 1003; 1093; 1117; 1127; 1171; 1185; 1204; 1250; 1276; 1350; 1360; 1388; 1393; 1407; 1430; 1540; 1707; 1727; 1869; 1950; 1964; 1978; 2259; 2300; 2372; 2495; 2524; 2530; 2539; 2547; 2570; 2582; 2588; 2669; 2686; 2694; 2721; 2746; 2830; 2839; 2843; 2867; 2905; 2981; 2998; 3017; 3080; 3124; 3134; 3151; 3234; 3261; 3265; 3302; 3325; 3341; 3521; 3548; 3609; 3731; 3770; 3827; 3834; 3841; 3860; 3871; 4122; 4151; 4194; 4205; 4270; 4349; 4374; 4379; 4425; 4515; 4613; 4639; 4657; 4668
CviQI	G!TAC	12	218; 243; 298; 331; 382; 539; 893; 917; 1052; 1145; 1343; 3066
DdeI	C!TNAG	7	1400; 2241; 2543; 3424; 3873; 3996; 4405
DinI	GGC!GCC	1	2762
DpnI	GA!TC	25	587; 672; 688; 831; 840; 1065; 1140; 1305; 1420; 2600; 2604; 2623; 2934; 3012; 3093; 3102; 3180; 3556; 3572; 3931; 3943; 4021; 4029; 4040; 4115
DpnII	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
DraI	TTT!AAA	3	1463; 3905; 3924
DraII	RG!GNCCY	1	3859
DraIII	CACNN!GTG	1	1877
DraRI	CAAGNACNNNNNNNNNNNNNNNNNN!	3	266; 940; 4241
DraRI	!NNNNNNNNNNNNNNNNNNGTCTTG	0	
DrdI	GACNNN!NNGTC	3	1832; 2788; 4577

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
DrdIV	TACGACNNNNNNNNNNNNNNNNNNNN!	0	
DrdIV	!NNNNNNNNNNNNNNNNNGTCGTA	1	476
DriI	GACNN!NNGTC	0	
DseDI	GACNNN!NNGTC	3	1832; 2788; 4577
EaeI	Y!GGCCR	9	764; 1115; 1169; 1202; 1405; 2667; 2841; 3232; 3259
EagI	C!GGCCG	4	1115; 1202; 1405; 2667
Eam1104I	CTCTTCN!	0	
Eam1104I	!NNNNGAAGAG	3	2228; 3105; 3315
Eam1105I	GACNNN!NNGTC	0	
EarI	CTCTTCN!	0	
EarI	!NNNNGAAGAG	3	2228; 3105; 3315
EciI	GGCGGANNNNNNNNNNNN!	4	2261; 3290; 4477; 4623
EciI	!NNNNNNNNNTCCGCC	5	496; 1247; 2432; 2453; 2474
Ecl136II	GAG!CTC	0	
EclXI	C!GGCCG	4	1115; 1202; 1405; 2667
Eco24I	GRGCY!C	4	1129; 1952; 3126; 3836
Eco31I	GGTCTCN!	0	
Eco31I	!NNNNNGAGACC	2	717; 3750
Eco32I	GAT!ATC	0	
Eco47I	G!GWCC	3	1289; 3277; 3722
Eco47III	AGC!GCT	0	
Eco52I	C!GGCCG	4	1115; 1202; 1405; 2667
Eco57I	CTGAAGNNNNNNNNNNNNNNNN!	4	1209; 1284; 2907; 3339
Eco57I	!NNNNNNNNNNNNNNCTTCAG	1	4137
Eco72I	CAC!GTG	0	
Eco81I	CC!TNAGG	2	2241; 3873
Eco88I	C!YCGRG	1	957
Eco91I	G!GTNACC	0	
Eco105I	TAC!GTA	1	340
Eco130I	C!CWWGG	6	360; 703; 2490; 2583; 3193; 3598
Eco147I	AGG!CCT	1	2582
EcoHI	!CCSGG	8	642; 1127; 1196; 1271; 2763; 2923; 3536; 4300
EcoICRI	GAG!CTC	0	
Eco57MI	CTGRAGNNNNNNNNNNNNNNNN!	5	1209; 1284; 2907; 3339; 3601
Eco57MI	!NNNNNNNNNNNNNNCTYCAG	2	3544; 4137
EcoNI	CCTNN!NNNAGG	0	
Eco065I	G!GTNACC	0	
Eco0109I	RG!GNCCY	1	3859
EcoRI	G!AATTC	0	
EcoRII	!CCWGG	17	88; 281; 817; 969; 1018; 1030; 1045; 1066; 2295; 2350; 2367; 3146; 3725; 3828; 4518; 4531; 4652
EcoRV	GAT!ATC	0	
EcoT14I	C!CWWGG	6	360; 703; 2490; 2583; 3193; 3598
EcoT22I	ATGCA!T	3	2333; 2405; 4736
EcoT38I	GRGCY!C	4	1129; 1952; 3126; 3836
Eco53kI	GAG!CTC	0	
EgeI	GGC!GCC	1	2762
EheI	GGC!GCC	1	2762
ErhI	C!CWWGG	6	360; 703; 2490; 2583; 3193; 3598
EsaBC3I	TC!GA	17	749; 809; 833; 842; 1286; 1301; 1911; 2602; 2875; 3031; 3055; 3091; 3253; 3444; 3489; 3744; 4582
Esp3I	CGTCTCN!	0	
Esp3I	!NNNNNGAGACG	0	
FaeI	CATG!	20	304; 364; 599; 707; 731; 893; 1310; 2191; 2331; 2403; 2494; 2635; 2980; 3166; 3197; 3223; 3579; 3963; 4683; 4734
Fail	YA!TR	56	39; 46; 50; 67; 138; 146; 234; 236; 291; 302; 310; 362; 555; 557; 597; 705; 729; 891; 1308; 1423; 1433; 1499; 1544; 1749; 2177; 2189; 2320; 2329; 2392; 2401; 2425; 2492; 2516; 2633; 2697; 2978; 3003; 3164; 3195; 3221; 3293; 3509; 3577; 3655; 3707; 3868; 3885; 3887; 3889; 3961; 4239; 4428; 4544; 4617; 4681; 4732
Fail	AAGNNNNNCTNNNNNNNNNNNN!	2	968; 3101
Fail	!NNNNNNNNAAGNNNNNCTT	2	936; 3069
FaqI	GGGACNNNNNNNNNN!	6	175; 326; 494; 2912; 3444; 3553
FaqI	!NNNNNNNNNNNNNGTCCC	5	1160; 2277; 2349; 2413; 3708

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
FatI	!CATG	20	300; 360; 595; 703; 727; 889; 1306; 2187; 2327; 2399; 2490; 2631; 2976; 3162; 3193; 3219; 3575; 3959; 4679; 4730
FauI	CCCGCNNNN!	10	93; 119; 286; 1091; 1259; 2083; 2438; 2459; 3655; 3787
FauI	!NNNNNNGCGGG	6	616; 2014; 2884; 3421; 3559; 3706
FauNDI	CA!TATG	1	234
FbaI	T!GATCA	0	
FblI	GT!MKAC	0	
FmuI	GGNC!C	15	86; 279; 644; 852; 1095; 1187; 1292; 1361; 1394; 1871; 3280; 3725; 3771; 3829; 3862
Fnu4HI	GC!NGC	43	612; 615; 618; 621; 648; 660; 848; 1001; 1118; 1164; 1169; 1202; 1351; 1361; 1375; 1408; 1538; 2057; 2079; 2093; 2531; 2670; 2722; 2733; 2823; 2828; 2865; 2906; 2993; 2999; 3235; 3331; 3372; 3386; 3500; 3839; 3854; 4065; 4271; 4274; 4339; 4482; 4637
FokI	GGATGNNNNNNNNN!	4	2628; 3085; 3110; 3564
FokI	!NNNNNNNNNNNNNNNNCATCC	3	858; 915; 2434
FriOI	GRGCY!C	4	1129; 1952; 3126; 3836
FseI	GGCCGG!CC	0	
FspI	TGC!GCA	1	2863
FspAI	RTGC!GCAY	0	
FspBI	C!TAG	8	592; 1416; 1610; 2028; 2584; 3599; 3933; 4186
FspEI	CCNNNNNNNNNNNN!	165	56; 71; 98; 114; 128; 129; 156; 182; 220; 252; 291; 307; 333; 373; 450; 451; 482; 501; 520; 593; 614; 656; 673; 687; 703; 722; 740; 755; 770; 816; 830; 864; 878; 893; 914; 938; 965; 983; 998; 1020; 1040; 1059; 1080; 1095; 1109; 1131; 1148; 1185; 1199; 1218; 1233; 1247; 1264; 1285; 1305; 1364; 1388; 1407; 1421; 1444; 1483; 1497; 1638; 1733; 1757; 1780; 1803; 1821; 1843; 1864; 1883; 1902; 1931; 1952; 1966; 1992; 2080; 2106; 2155; 2196; 2214; 2253; 2269; 2307; 2364; 2379; 2436; 2456; 2470; 2487; 2501; 2538; 2553; 2596; 2679; 2746; 2777; 2797; 2812; 2857; 2871; 2937; 2951; 2970; 2986; 3027; 3047; 3094; 3144; 3160; 3180; 3205; 3225; 3248; 3275; 3293; 3319; 3359; 3385; 3409; 3465; 3479; 3507; 3550; 3571; 3606; 3650; 3738; 3762; 3784; 3804; 3820; 3841; 3855; 3874; 3958; 3978; 4006; 4021; 4055; 4097; 4124; 4139; 4184; 4208; 4222; 4244; 4270; 4290; 4314; 4340; 4388; 4407; 4426; 4452; 4487; 4532; 4562; 4576; 4627; 4641; 4666; 4682; 4703; 4732
FspEI	!NNNNNNNNNNNNNNNGG	128	8; 35; 59; 144; 166; 197; 252; 295; 347; 375; 400; 435; 463; 509; 529; 552; 608; 629; 666; 690; 735; 769; 795; 819; 880; 910; 945; 978; 1005; 1032; 1053; 1075; 1095; 1114; 1134; 1153; 1183; 1258; 1293; 1332; 1374; 1432; 1532; 1601; 1631; 1709; 1758; 1780; 1808; 1844; 1889; 1918; 1954; 1973; 2001; 2021; 2084; 2107; 2215; 2247; 2265; 2294; 2337; 2366; 2477; 2506; 2549; 2570; 2598; 2631; 2651; 2676; 2703; 2728; 2750; 2778; 2804; 2825; 2876; 2897; 2915; 2963; 2999; 3055; 3080; 3104; 3133; 3156; 3180; 3206; 3228; 3247; 3272; 3312; 3348; 3413; 3498; 3522; 3551; 3585; 3606; 3626; 3671; 3698; 3717; 3750; 3802; 3833; 3860; 3912; 4010; 4081; 4126; 4187; 4252; 4286; 4312; 4330; 4366; 4436; 4459; 4481; 4505; 4538; 4586; 4621; 4639; 4696
Fsp4HI	GC!NGC	43	612; 615; 618; 621; 648; 660; 848; 1001; 1118; 1164; 1169; 1202; 1351; 1361; 1375; 1408; 1538; 2057; 2079; 2093; 2531; 2670; 2722; 2733; 2823; 2828; 2865; 2906; 2993; 2999; 3235; 3331; 3372; 3386; 3500; 3839; 3854; 4065; 4271; 4274; 4339; 4482; 4637
GdiII	C!GGCCR	6	764; 1115; 1169; 1202; 1405; 2667
GdiII	Y!GGCCG	6	1115; 1202; 1405; 2667; 3232; 3259
GlaI	GC!GC	24	663; 665; 978; 1167; 2026; 2034; 2060; 2082; 2091; 2104; 2135; 2754; 2762; 2826; 2863; 3129; 3389; 3565; 3651; 4054; 4163; 4337; 4437; 4504
GluI	GC!NGC	43	612; 615; 618; 621; 648; 660; 848; 1001; 1118; 1164; 1169; 1202; 1351; 1361; 1375; 1408; 1538; 2057; 2079; 2093; 2531; 2670; 2722; 2733; 2823; 2828; 2865; 2906; 2993; 2999; 3235; 3331; 3372; 3386; 3500; 3839; 3854; 4065; 4271; 4274; 4339; 4482; 4637
GsaI	CCCAG!C	3	2308; 2380; 4379
GsaI	GCTGG!G	3	1124; 1392; 3269
GsuI	CTGGAGNNNNNNNNNNNNNNNN!	1	3601
GsuI	!NNNNNNNNNNNNNNNNCTCCAG	1	3544
HaeI	WGG!CCW	6	708; 2582; 2843; 4205; 4657; 4668

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
HaeII	RGCGC!Y	4	2028; 2036; 2764; 4439
HaeIII	GG!CC	32	84; 277; 642; 708; 766; 850; 1093; 1117; 1171; 1185; 1204; 1350; 1360; 1393; 1407; 1727; 1869; 2524; 2530; 2539; 2582; 2669; 2843; 3234; 3261; 3770; 3827; 3860; 4205; 4639; 4657; 4668
HaeIV	GAYNNNNNRTCNNNNNNNNNNNNN!	2	1436; 2957
HaeIV	!NNNNNNNNNGAYNNNNNNRTC	2	1402; 2923
HaeIV	GAYNNNNNRTCNNNNNNNNNNNNN!	2	1435; 2956
HaeIV	!NNNNNNNNNGAYNNNNNNRTC	2	1404; 2925
HapII	C!CGG	23	644; 693; 925; 1129; 1198; 1205; 1273; 1979; 2666; 2743; 2765; 2793; 2924; 3014; 3081; 3262; 3537; 3545; 3637; 4111; 4301; 4327; 4474
HgaI	GACGCNNNNN!	5	526; 617; 1380; 3471; 3550
HgaI	!NNNNNNNNNNNGCGTC	3	2094; 3989; 4567
HhaI	GCG!C	24	664; 666; 979; 1168; 2027; 2035; 2061; 2083; 2092; 2105; 2136; 2755; 2763; 2827; 2864; 3130; 3390; 3566; 3652; 4055; 4164; 4338; 4438; 4505
Hin1I	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
Hin1II	CATG!	20	304; 364; 599; 707; 731; 893; 1310; 2191; 2331; 2403; 2494; 2635; 2980; 3166; 3197; 3223; 3579; 3963; 4683; 4734
Hin4I	GAYNNNNNVTCNNNNNNNNNNNN!	2	1435; 2956
Hin4I	!NNNNNNNNNGABNNNNNNRTC	3	1403; 2924; 2954
Hin4I	GABNNNNNRTCNNNNNNNNNNNNN!	3	1435; 2956; 2986
Hin4I	!NNNNNNNNNGAYNNNNNVTC	2	1403; 2924
Hin6I	G!CGC	24	662; 664; 977; 1166; 2025; 2033; 2059; 2081; 2090; 2103; 2134; 2753; 2761; 2825; 2862; 3128; 3388; 3564; 3650; 4053; 4162; 4336; 4436; 4503
HinPII	G!CGC	24	662; 664; 977; 1166; 2025; 2033; 2059; 2081; 2090; 2103; 2134; 2753; 2761; 2825; 2862; 3128; 3388; 3564; 3650; 4053; 4162; 4336; 4436; 4503
HincII	GTY!RAC	1	1524
HindII	GTY!RAC	1	1524
HindIII	A!AGCTT	0	
Hinfl	G!ANTC	12	410; 1412; 1804; 1826; 2236; 3246; 3380; 3432; 3490; 3527; 4309; 4705
HpaI	GTT!AAC	1	1524
HpaII	C!CGG	23	644; 693; 925; 1129; 1198; 1205; 1273; 1979; 2666; 2743; 2765; 2793; 2924; 3014; 3081; 3262; 3537; 3545; 3637; 4111; 4301; 4327; 4474
HphI	GGTGANNNNNNNN!	5	376; 848; 1070; 3832; 3948
HphI	!NNNNNNNTCACC	3	959; 1878; 2939
Hpy8I	GTN!NAC	13	201; 539; 577; 761; 880; 1052; 1145; 1154; 1524; 1808; 1825; 1880; 4367
Hpy99I	CGWCG!	9	1092; 1374; 2851; 2879; 3173; 3188; 3465; 3850; 4583
Hpy166II	GTN!NAC	13	201; 539; 577; 761; 880; 1052; 1145; 1154; 1524; 1808; 1825; 1880; 4367
Hpy188I	TCN!GA	11	585; 1935; 2544; 2728; 3072; 3425; 3526; 4005; 4139; 4492; 4570
Hpy188III	TC!NNGA	24	605; 737; 1007; 1301; 1416; 2188; 2240; 2553; 2606; 2779; 3095; 3104; 3187; 3243; 3287; 3377; 3410; 3479; 3960; 4034; 4117; 4215; 4313; 4447
HpyAV	CCTCNNNNNN!	8	743; 815; 869; 917; 962; 3406; 3513; 4192
HpyAV	!NNNNNGAAGG	8	1316; 1994; 2889; 3618; 3634; 3817; 4134; 4444
HpyCH4III	ACN!GT	14	76; 198; 269; 543; 581; 758; 1852; 3141; 3257; 3365; 3688; 4179; 4649; 4720
HpyCH4IV	A!CGT	15	122; 134; 175; 258; 339; 444; 919; 1821; 1833; 1876; 1986; 2877; 3064; 3845; 3978
HpyCH4V	TG!CA	20	781; 889; 1103; 1226; 1510; 1537; 1605; 2322; 2331; 2394; 2403; 2518; 2594; 2653; 2812; 2987; 3001; 4071; 4367; 4734
HpyF3I	C!TNAG	7	1400; 2241; 2543; 3424; 3873; 3996; 4405
HpyF10VI	GCNNNNN!NNGC	34	90; 212; 244; 283; 376; 400; 617; 634; 656; 705; 778; 895; 1165; 1201; 1366; 1988; 2018; 2045; 2087; 2328; 2400; 2451; 2530; 2752; 2836; 2859; 2998; 3121; 3204; 3471; 3658; 3862; 4061; 4633
Hsp92I	GR!CGYC	9	122; 175; 258; 444; 609; 1372; 2761; 3463; 3542
Hsp92II	CATG!	20	304; 364; 599; 707; 731; 893; 1310; 2191; 2331; 2403; 2494; 2635; 2980; 3166; 3197; 3223; 3579; 3963; 4683; 4734

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
HspAI	G!CGC	24	662; 664; 977; 1166; 2025; 2033; 2059; 2081; 2090; 2103; 2134; 2753; 2761; 2825; 2862; 3128; 3388; 3564; 3650; 4053; 4162; 4336; 4436; 4503
KasI	G!GCGCC	1	2760
KfII	GG!GWCCC	0	
KpnI	GGTAC!C	0	
Kpn2I	T!CCGGA	0	
KspI	CCGC!GG	0	
Ksp22I	T!GATCA	0	
KspAI	GTT!AAC	1	1524
Kzo9I	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
LguI	GCTCTTCN!	0	
LguI	!NNNNGAAGAGC	2	3105; 3315
LpnI	RGC!GCGY	4	2026; 2034; 2762; 4437
LpnPI	CCDGNNNNNNNNN!	65	102; 295; 618; 657; 706; 726; 831; 867; 888; 938; 983; 1020; 1044; 1059; 1080; 1142; 1185; 1200; 1218; 1236; 1275; 1498; 1803; 1992; 2215; 2253; 2269; 2309; 2364; 2381; 2481; 2566; 2679; 2756; 2778; 2801; 2937; 2951; 2970; 3027; 3094; 3144; 3160; 3217; 3275; 3484; 3550; 3574; 3650; 3739; 3842; 3875; 4106; 4124; 4270; 4290; 4314; 4340; 4389; 4487; 4532; 4562; 4641; 4666; 4703
LpnPI	!NNNNNNNNNNNNNCHGG	56	75; 268; 552; 619; 678; 804; 910; 956; 1005; 1032; 1053; 1106; 1183; 1258; 1374; 1844; 1964; 2021; 2084; 2282; 2294; 2354; 2366; 2598; 2643; 2686; 2728; 2750; 2778; 2825; 2887; 2909; 2999; 3066; 3089; 3133; 3228; 3247; 3272; 3421; 3522; 3565; 3622; 3712; 3815; 3842; 3860; 4096; 4133; 4286; 4312; 4452; 4470; 4505; 4586; 4639
Lsp1109I	GCAGCNNNNNNNN!	6	1549; 2834; 2876; 3397; 3850; 4350
Lsp1109I	!NNNNNNNNNNNGCTGC	8	601; 1150; 2043; 2708; 2892; 2985; 4051; 4257
LweI	GCATCNNNNNN!	9	790; 937; 1306; 1577; 2340; 2412; 3060; 3124; 3399
LweI	!NNNNNNNNNGATGC	7	357; 1090; 1258; 2719; 2974; 3190; 4582
MabI	A!CCWGGT	1	2350
MaeI	C!TAG	8	592; 1416; 1610; 2028; 2584; 3599; 3933; 4186
MaeII	A!CGT	15	122; 134; 175; 258; 339; 444; 919; 1821; 1833; 1876; 1986; 2877; 3064; 3845; 3978
MaeIII	!GTNAC	13	61; 148; 497; 1071; 1549; 2050; 2062; 2881; 3187; 3877; 4143; 4259; 4322
MaiI	GA!TC	25	587; 672; 688; 831; 840; 1065; 1140; 1305; 1420; 2600; 2604; 2623; 2934; 3012; 3093; 3102; 3180; 3556; 3572; 3931; 3943; 4021; 4029; 4040; 4115
MaqI	CRTTGACNNNNNNNNNNNNNNNNNNNNNN!	4	144; 197; 466; 540
MaqI	!NNNNNNNNNNNNNNNNNNNGTCAAYG	3	157; 240; 426
MauBI	CG!CGCGCG	0	
MbiI	CCG!CTC	3	1240; 2185; 3374
MbiI	GAG!CGG	3	1404; 2021; 3428
MboI	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
MboII	GAAGANNNNNNNN!	8	839; 1073; 1277; 2017; 2245; 3122; 3332; 3951
MboII	!NNNNNNNTCTTC	4	3412; 3579; 3779; 4022
McaTI	GCGC!GC	1	665
MfeI	C!AATTG	1	1511
MfII	R!GATCY	11	585; 670; 686; 1063; 2932; 3178; 3570; 3929; 3941; 4027; 4038
MhII	GDGCH!C	12	756; 816; 1129; 1197; 1952; 2707; 2800; 2874; 3064; 3126; 3836; 4369
MIsI	TGG!CCA	1	2843
MluI	A!CGCGT	0	
MluNI	TGG!CCA	1	2843
MlyI	GAGTCNNNNNN!	2	1813; 2245
MlyI	!NNNNNGACTC	5	404; 1406; 1820; 3426; 4303
Mly113I	GG!CGCC	1	2761
MmeI	TCCRACNNNNNNNNNNNNNNNNNNNNNN!	1	1854
MmeI	!NNNNNNNNNNNNNNNNNGTYGGA	2	4286; 4470
MnII	CCTCNNNNNNN!	12	719; 893; 1037; 1265; 1391; 1480; 2544; 3362; 3568; 3882; 4252; 4576

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
MnII	!NNNNNNGAGG	23	541; 743; 788; 803; 827; 953; 986; 1142; 1280; 1304; 1340; 1440; 1905; 2236; 2514; 2557; 2572; 2612; 2676; 2812; 3169; 3599; 4502
Mph1103I	ATGCA!T	3	2333; 2405; 4736
MreI	CG!CCGGCG	0	
MroI	T!CCGGA	0	
MroNI	G!CCGGC	4	1204; 1978; 3261; 3544
MroXI	GAANN!NNTTC	0	
MscI	TGG!CCA	1	2843
MseI	T!TAA	15	7; 1462; 1523; 1644; 1665; 1676; 1688; 1699; 1716; 1814; 2085; 3904; 3918; 3923; 3975
MslI	CAYNN!NNRTG	2	365; 3198
MspI	C!CGG	23	644; 693; 925; 1129; 1198; 1205; 1273; 1979; 2666; 2743; 2765; 2793; 2924; 3014; 3081; 3262; 3537; 3545; 3637; 4111; 4301; 4327; 4474
Msp20I	TGG!CCA	1	2843
MspAII	CMG!CKG	6	614; 1120; 2259; 2867; 4096; 4341
MspCI	C!TTAAG	1	1643
MspJI	CNNRRNNNNNNNN!	238	36; 50; 71; 97; 113; 127; 147; 167; 219; 236; 251; 290; 306; 319; 332; 352; 373; 407; 424; 449; 481; 500; 523; 548; 574; 596; 617; 636; 650; 665; 679; 705; 725; 740; 761; 788; 806; 821; 845; 866; 882; 898; 913; 926; 945; 969; 982; 1000; 1019; 1032; 1058; 1079; 1095; 1109; 1133; 1147; 1160; 1179; 1199; 1217; 1235; 1255; 1274; 1298; 1313; 1340; 1358; 1396; 1412; 1428; 1444; 1468; 1485; 1498; 1539; 1553; 1566; 1584; 1622; 1637; 1655; 1696; 1720; 1740; 1758; 1779; 1802; 1834; 1849; 1871; 1889; 1902; 1923; 1940; 1953; 1966; 1982; 1995; 2025; 2040; 2065; 2083; 2096; 2111; 2135; 2149; 2173; 2198; 2214; 2252; 2268; 2307; 2321; 2335; 2363; 2379; 2393; 2407; 2436; 2449; 2470; 2479; 2501; 2531; 2547; 2565; 2595; 2618; 2642; 2666; 2685; 2713; 2739; 2755; 2768; 2791; 2805; 2825; 2838; 2852; 2871; 2885; 2898; 2914; 2929; 2942; 2958; 2973; 2989; 3014; 3033; 3049; 3062; 3075; 3093; 3107; 3121; 3137; 3159; 3175; 3194; 3216; 3232; 3255; 3274; 3288; 3304; 3318; 3338; 3354; 3367; 3389; 3422; 3436; 3456; 3469; 3483; 3537; 3550; 3573; 3586; 3605; 3622; 3649; 3685; 3718; 3737; 3762; 3783; 3810; 3823; 3840; 3854; 3869; 3885; 3945; 3970; 3986; 4008; 4021; 4035; 4066; 4080; 4105; 4123; 4138; 4151; 4170; 4183; 4198; 4227; 4246; 4264; 4289; 4304; 4323; 4339; 4358; 4376; 4392; 4406; 4425; 4452; 4475; 4497; 4516; 4531; 4544; 4561; 4581; 4608; 4621; 4640; 4665; 4688; 4702; 4715; 4732
MspJI	!NNNNNNNNNNNNNYNGG	202	8; 35; 59; 76; 97; 123; 145; 168; 197; 221; 269; 281; 310; 330; 347; 377; 400; 437; 465; 492; 511; 531; 553; 574; 591; 608; 625; 647; 667; 690; 708; 735; 762; 780; 804; 828; 847; 872; 900; 919; 943; 976; 993; 1017; 1041; 1069; 1095; 1114; 1132; 1151; 1173; 1191; 1209; 1230; 1248; 1270; 1287; 1314; 1332; 1354; 1371; 1395; 1413; 1442; 1471; 1513; 1596; 1631; 1658; 1681; 1710; 1754; 1776; 1808; 1844; 1861; 1882; 1919; 1939; 1956; 1973; 2008; 2026; 2044; 2061; 2085; 2107; 2134; 2162; 2188; 2226; 2247; 2264; 2282; 2305; 2326; 2354; 2377; 2398; 2416; 2437; 2454; 2477; 2501; 2521; 2539; 2561; 2592; 2614; 2640; 2659; 2676; 2704; 2723; 2742; 2760; 2778; 2799; 2821; 2845; 2878; 2898; 2916; 2937; 2963; 2990; 3007; 3024; 3041; 3067; 3089; 3111; 3129; 3149; 3168; 3190; 3228; 3248; 3272; 3292; 3312; 3339; 3363; 3396; 3415; 3443; 3465; 3494; 3522; 3547; 3566; 3585; 3606; 3623; 3640; 3671; 3698; 3718; 3741; 3761; 3798; 3815; 3834; 3860; 3880; 3919; 3946; 3965; 3983; 4020; 4038; 4079; 4097; 4123; 4140; 4172; 4201; 4229; 4250; 4273; 4292; 4313; 4331; 4348; 4366; 4392; 4413; 4433; 4453; 4471; 4492; 4518; 4535; 4554; 4573; 4602; 4621; 4639; 4658; 4676; 4694; 4717
MspR9I	CC!NGG	25	90; 283; 644; 819; 971; 1020; 1032; 1047; 1068; 1129; 1198; 1273; 2297; 2352; 2369; 2765; 2925; 3148; 3538; 3727; 3830; 4302; 4520; 4533; 4654
MssI	GTTT!AAAC	0	
MunI	C!AATTG	1	1511
MvaI	CC!WGG	17	90; 283; 819; 971; 1020; 1032; 1047; 1068; 2297; 2352; 2369; 3148; 3727; 3830; 4520; 4533; 4654
Mva1269I	GAATGCN!	1	1512
Mva1269I	G!CATTC	1	1605

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
MvnI	CG!CG	18	60; 662; 664; 1168; 1410; 1685; 2061; 2081; 2105; 2136; 2827; 3128; 3566; 3650; 3713; 3782; 4055; 4636
MvrI	CGAT!CG	0	
MwoI	GCNNNNN!NNGC	34	90; 212; 244; 283; 376; 400; 617; 634; 656; 705; 778; 895; 1165; 1201; 1366; 1988; 2018; 2045; 2087; 2328; 2400; 2451; 2530; 2752; 2836; 2859; 2998; 3121; 3204; 3471; 3658; 3862; 4061; 4633
NaeI	GCC!GGC	4	1206; 1980; 3263; 3546
NarI	GG!CGCC	1	2761
NciI	CC!SGG	8	644; 1129; 1198; 1273; 2765; 2925; 3538; 4302
NcoI	C!CATGG	4	360; 703; 2490; 3193
NdeI	CA!TATG	1	234
NdeII	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
NgoAVIII	GACNNNNNTGANNNNNNNNNNNN!	1	280
NgoAVIII	!NNNNNNNNNNNTCANNNNNGTC	0	
NgoAVIII	TCANNNNNGTCNNNNNNNNNNNN!	0	
NgoAVIII	!NNNNNNNNNNNGACNNNNNTGA	1	244
NgoMIV	G!CCGGC	4	1204; 1978; 3261; 3544
NheI	G!CTAGC	1	591
NlaIII	CATG!	20	304; 364; 599; 707; 731; 893; 1310; 2191; 2331; 2403; 2494; 2635; 2980; 3166; 3197; 3223; 3579; 3963; 4683; 4734
NlaIV	GGN!NCC	24	467; 651; 688; 755; 815; 851; 899; 1094; 1126; 1133; 1209; 1916; 1937; 1949; 2140; 2301; 2373; 2762; 2797; 3645; 3724; 3769; 4612; 4651
NlaCI	CATCACNNNNNNNNNNNNNNNN!	3	1593; 1908; 3500
NlaCI	!NNNNNNNNNNNNNNNNNGTGATG	3	347; 1080; 4572
Nli3877I	CYCGR!G	1	961
NmeAIII	GCCGAGNNNNNNNNNNNNNNNN!	2	2550; 2986
NmeAIII	!NNNNNNNNNNNNNNNNNCTCGGC	2	618; 2515
NmeDI	RCCGGYNNNNNN!	6	704; 1216; 1990; 3092; 3273; 3556
NmeDI	!NNNNNNNNNNNNRCCGGY	6	679; 1191; 1965; 3067; 3248; 3531
NmuCI	!GTSAC	3	2050; 2881; 3187
NotI	GC!GGCCGC	1	1405
NruI	TCG!CGA	0	
NsbI	TGC!GCA	1	2863
NsiI	ATGCA!T	3	2333; 2405; 4736
NspI	RCATG!Y	6	599; 893; 2331; 2403; 3166; 4683
NspV	TT!CGAA	1	3443
OliI	CACNN!NNGTG	0	
PabI	GTA!C	12	220; 245; 300; 333; 384; 541; 895; 919; 1054; 1147; 1345; 3068
PacI	TTAAT!TAA	0	
PaeI	GCATG!C	3	2331; 2403; 3166
PaeR7I	C!TCGAG	0	
PagI	T!CATGA	2	2187; 3959
PalAI	GG!CGCGCC	0	
PasI	CC!CWGGG	2	3726; 3829
PauI	G!CGCGC	1	662
PceI	AGG!CCT	1	2582
PciI	A!CATGT	1	4679
PciSI	GCTCTTCN!	0	
PciSI	!NNNNGAAGAGC	2	3105; 3315
PcsI	WCGNNNN!NNNCGW	10	754; 790; 838; 1351; 3055; 3132; 3375; 3449; 3842; 4360
PctI	GAATGCN!	1	1512
PctI	G!CATTC	1	1605
PdiI	GCC!GGC	4	1206; 1980; 3263; 3546
PdmI	GAANN!NNTTC	0	
PfeI	G!AWTC	5	3246; 3380; 3490; 3527; 4705
Pfl23II	C!GTACG	0	
PfIFI	GACN!NNGTC	1	2879
PfIMI	CCANNNN!NTGG	1	680
PfoI	T!CCNGGA	1	3536

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
PhoI	GG!CC	32	84; 277; 642; 708; 766; 850; 1093; 1117; 1171; 1185; 1204; 1350; 1360; 1393; 1407; 1727; 1869; 2524; 2530; 2539; 2582; 2669; 2843; 3234; 3261; 3770; 3827; 3860; 4205; 4639; 4657; 4668
PinAI	A!CCGGT	1	692
PlaDI	CATCAGNNNNNNNNNNNNNNNNNNNN!	1	3142
PlaDI	!NNNNNNNNNNNNNNNNNNNNCTGATG	3	1159; 2707; 2962
PleI	GAGTCNNNN!	2	1812; 2244
PleI	!NNNNNGACTC	5	404; 1406; 1820; 3426; 4303
Ple19I	CGAT!CG	0	
PmaCI	CAC!GTG	0	
PmeI	GTTT!AAAC	0	
PmlI	CAC!GTG	0	
PpiI	GAACNNNNNNCTCNNNNNNNNNNNN!	1	1843
PpiI	!NNNNNNNNNGAGNNNNNGTTC	1	3973
PpiI	GAGNNNNNGTTCNNNNNNNNNNNN!	1	4005
PpiI	!NNNNNNNGAACNNNNNNCTC	1	1811
PpsI	GAGTCNNNN!	2	1812; 2244
PpsI	!NNNNNGACTC	5	404; 1406; 1820; 3426; 4303
Ppu10I	A!TGCAT	3	2329; 2401; 4732
Ppu21I	YAC!GTR	4	340; 920; 1877; 3065
PpuMI	RG!GWCCY	0	
PscI	A!CATGT	1	4679
PshAI	GACNN!NNGTC	0	
PshBI	AT!TAAT	1	7
PsiI	TTA!TAA	2	1544; 1749
Psp03I	GGWC!C	3	1292; 3280; 3725
Psp5II	RG!GWCCY	0	
Psp6I	!CCWGG	17	88; 281; 817; 969; 1018; 1030; 1045; 1066; 2295; 2350; 2367; 3146; 3725; 3828; 4518; 4531; 4652
Psp1406I	AA!CGTT	0	
Psp124BI	GAGCT!C	0	
PspCI	CAC!GTG	0	
PspEI	G!GTNACC	0	
PspGI	!CCWGG	17	88; 281; 817; 969; 1018; 1030; 1045; 1066; 2295; 2350; 2367; 3146; 3725; 3828; 4518; 4531; 4652
PspLI	C!GTACG	0	
PspN4I	GGN!NCC	24	467; 651; 688; 755; 815; 851; 899; 1094; 1126; 1133; 1209; 1916; 1937; 1949; 2140; 2301; 2373; 2762; 2797; 3645; 3724; 3769; 4612; 4651
PspOMI	G!GGCCC	0	
PspOMII	CGCCARNNNNNNNNNNNNNNNNNNN!	3	125; 2491; 3490
PspOMII	!NNNNNNNNNNNNNNNNNNNYTGGGCG	1	2893
PspPI	G!GNCC	15	83; 276; 641; 849; 1092; 1184; 1289; 1358; 1391; 1868; 3277; 3722; 3768; 3826; 3859
PspPPI	RG!GWCCY	0	
PspPRI	CCYCAGNNNNNNNNNNNNNNNN!	3	2314; 2386; 3892
PspPRI	!NNNNNNNNNNNNNNNNNNCTGRGG	2	2227; 3422
PspXI	VC!TCGAGB	0	
PsrI	GAACNNNNNNNTACNNNNNNNNNNNN!	0	
PsrI	!NNNNNNNGTANNNNNNGTTC	0	
PsrI	GTANNNNNNGTTCNNNNNNNNNNNN!	0	
PsrI	!NNNNNNNGAACNNNNNNNTAC	0	
PssI	RGGNC!CY	1	3862
PstI	CTGCA!G	0	
PstNI	CAGNNN!CTG	3	1178; 3862; 4270
PsuI	R!GATCY	11	585; 670; 686; 1063; 2932; 3178; 3570; 3929; 3941; 4027; 4038
PsyI	GACN!NNGTC	1	2879
PteI	G!CGCGC	1	662
PvuI	CGAT!CG	0	
PvuII	CAG!CTG	2	2259; 2867
RcaI	T!CATGA	2	2187; 3959
RceI	CATCGACNNNNNNNNNNNNNNNNNN!	1	3276
RceI	!NNNNNNNNNNNNNNNNNNNGTTCGATG	0	
RgaI	GCGAT!CGC	0	
RigI	GGCCGG!CC	0	

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
RleAI	CCCACANNNNNNNNNNNNN!	1	1490
RleAI	!NNNNNNNNNTGTGGG	0	
RpaBI	CCCGCAGNNNNNNNNNNNNNNNNNNNN!	0	
RpaBI	!NNNNNNNNNNNNNNNNNNNNCTGCGGG	1	602
RpaB5I	CGRGGACNNNNNNNNNNNNNNNNNNNN!	2	1018; 1312
RpaB5I	!NNNNNNNNNNNNNNNNNNNGTCCYCG	0	
RruI	TCG!CGA	0	
RsaI	GT!AC	12	219; 244; 299; 332; 383; 540; 894; 918; 1053; 1146; 1344; 3067
RsaNI	G!TAC	12	218; 243; 298; 331; 382; 539; 893; 917; 1052; 1145; 1343; 3066
RseI	CAYNN!NNRTG	2	365; 3198
RsrII	CG!GWCCG	1	3277
Rsr2I	CG!GWCCG	1	3277
SacI	GAGCT!C	0	
SacII	CCGC!GG	0	
SalI	G!TCGAC	0	
SapI	GCTCTTCN!	0	
SapI	!NNNNGAAGAGC	2	3105; 3315
SaqAI	T!TAA	15	7; 1462; 1523; 1644; 1665; 1676; 1688; 1699; 1716; 1814; 2085; 3904; 3918; 3923; 3975
SatI	GC!NGC	43	612; 615; 618; 621; 648; 660; 848; 1001; 1118; 1164; 1169; 1202; 1351; 1361; 1375; 1408; 1538; 2057; 2079; 2093; 2531; 2670; 2722; 2733; 2823; 2828; 2865; 2906; 2993; 2999; 3235; 3331; 3372; 3386; 3500; 3839; 3854; 4065; 4271; 4274; 4339; 4482; 4637
Sau96I	G!GNCC	15	83; 276; 641; 849; 1092; 1184; 1289; 1358; 1391; 1868; 3277; 3722; 3768; 3826; 3859
Sau3AI	!GATC	25	585; 670; 686; 829; 838; 1063; 1138; 1303; 1418; 2598; 2602; 2621; 2932; 3010; 3091; 3100; 3178; 3554; 3570; 3929; 3941; 4019; 4027; 4038; 4113
SbfI	CCTGCA!GG	0	
ScaI	AGT!ACT	0	
SchI	GAGTCNNNNN!	2	1813; 2245
SchI	!NNNNNGACTC	5	404; 1406; 1820; 3426; 4303
SciI	CTC!GAG	0	
ScrFI	CC!NGG	25	90; 283; 644; 819; 971; 1020; 1032; 1047; 1068; 1129; 1198; 1273; 2297; 2352; 2369; 2765; 2925; 3148; 3538; 3727; 3830; 4302; 4520; 4533; 4654
SdaI	CCTGCA!GG	0	
SdeAI	CAGRAGNNNNNNNNNNNNNNNNNNNN!	5	845; 2339; 2411; 2580; 4522
SdeAI	!NNNNNNNNNNNNNNNNNNNNCTYCTG	3	864; 2916; 3401
SdeOSI	GACNNNNRTGANNNNNNNNNNNNN!	1	279
SdeOSI	!NNNNNNNNNNNTCAYNNNNNGTC	0	
SdeOSI	TCAYNNNNNGTCNNNNNNNNNNNN!	0	
SdeOSI	!NNNNNNNNNNNGACNNNNRTGA	1	245
SduI	GDGCH!C	12	756; 816; 1129; 1197; 1952; 2707; 2800; 2874; 3064; 3126; 3836; 4369
SelI	!CGCG	18	58; 660; 662; 1166; 1408; 1683; 2059; 2079; 2103; 2134; 2825; 3126; 3564; 3648; 3711; 3780; 4053; 4634
SetI	ASST!	65	125; 137; 178; 261; 308; 342; 447; 552; 568; 838; 885; 909; 922; 972; 990; 1029; 1060; 1114; 1153; 1213; 1218; 1225; 1236; 1318; 1390; 1451; 1472; 1481; 1493; 1542; 1709; 1824; 1836; 1879; 1916; 1966; 1989; 2113; 2261; 2356; 2549; 2662; 2790; 2869; 2880; 2952; 3023; 3067; 3327; 3473; 3517; 3848; 3879; 3938; 3981; 4124; 4145; 4244; 4381; 4396; 4415; 4427; 4471; 4517; 4568
SexAI	A!CCWGGT	1	2350
SfaAI	GCGAT!CGC	0	
SfaNI	GCATCNNNNN!	9	790; 937; 1306; 1577; 2340; 2412; 3060; 3124; 3399
SfaNI	!NNNNNNNNNGATGC	7	357; 1090; 1258; 2719; 2974; 3190; 4582
SfcI	C!TRYAG	3	2096; 4223; 4414
SfiI	GGCCNNNN!NGGCC	1	2536
SfoI	GGC!GCC	1	2762
Sfr274I	C!TCGAG	0	
Sfr303I	CCGC!GG	0	
SfuI	TT!CGAA	1	3443

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
SgeI	CNNGNNNNNNNNNN!	192	6; 36; 71; 97; 123; 223; 236; 252; 290; 307; 336; 373; 407; 426; 491; 548; 579; 604; 617; 636; 650; 666; 680; 705; 725; 740; 761; 788; 806; 821; 845; 866; 887; 902; 926; 945; 969; 982; 1004; 1019; 1032; 1058; 1079; 1095; 1109; 1133; 1148; 1172; 1190; 1209; 1223; 1256; 1274; 1298; 1313; 1340; 1358; 1397; 1421; 1468; 1497; 1539; 1622; 1696; 1780; 1802; 1834; 1871; 1889; 1908; 1923; 1965; 1982; 1999; 2034; 2048; 2065; 2087; 2111; 2135; 2200; 2214; 2252; 2268; 2308; 2321; 2340; 2363; 2380; 2393; 2412; 2442; 2463; 2480; 2503; 2538; 2565; 2596; 2618; 2644; 2666; 2685; 2713; 2749; 2768; 2791; 2805; 2825; 2838; 2852; 2871; 2885; 2904; 2936; 2950; 2963; 2989; 3020; 3033; 3050; 3067; 3081; 3098; 3116; 3131; 3159; 3175; 3194; 3216; 3232; 3255; 3274; 3299; 3318; 3338; 3365; 3389; 3422; 3441; 3469; 3483; 3549; 3573; 3588; 3611; 3632; 3649; 3697; 3724; 3738; 3767; 3791; 3824; 3841; 3861; 3874; 3887; 3945; 3972; 3991; 4021; 4046; 4066; 4080; 4105; 4123; 4160; 4198; 4227; 4255; 4269; 4289; 4304; 4325; 4339; 4358; 4376; 4392; 4432; 4452; 4479; 4497; 4518; 4531; 4544; 4561; 4585; 4608; 4640; 4665; 4692; 4714
SgeI	!NNNNNNNNNNNNCNG	168	10; 45; 71; 97; 197; 226; 264; 281; 310; 347; 381; 400; 465; 522; 553; 578; 610; 629; 647; 679; 699; 723; 744; 762; 780; 804; 828; 861; 888; 906; 930; 956; 978; 1005; 1032; 1053; 1081; 1107; 1128; 1146; 1164; 1183; 1202; 1230; 1248; 1272; 1293; 1314; 1332; 1371; 1395; 1442; 1471; 1513; 1596; 1670; 1754; 1776; 1808; 1845; 1863; 1882; 1939; 1956; 1973; 2008; 2026; 2046; 2066; 2085; 2109; 2174; 2226; 2282; 2314; 2337; 2354; 2386; 2416; 2437; 2454; 2477; 2512; 2539; 2570; 2592; 2618; 2640; 2659; 2687; 2723; 2742; 2765; 2786; 2804; 2821; 2845; 2878; 2910; 2937; 2963; 2994; 3024; 3041; 3067; 3090; 3111; 3133; 3153; 3173; 3190; 3229; 3248; 3273; 3292; 3312; 3339; 3363; 3396; 3415; 3443; 3465; 3523; 3547; 3566; 3585; 3606; 3623; 3671; 3698; 3718; 3741; 3765; 3798; 3815; 3835; 3861; 3919; 3946; 3965; 3995; 4020; 4040; 4079; 4097; 4134; 4172; 4201; 4229; 4250; 4278; 4299; 4332; 4350; 4406; 4426; 4453; 4471; 4492; 4518; 4535; 4559; 4582; 4614; 4639; 4666; 4688; 4717
SgfI	GCGAT!CGC	0	
SgrAI	CR!CCGGYG	0	
SgrBI	CCGC!GG	0	
SgrDI	CG!TCGACG	0	
SgsI	GG!CGCGCC	0	
SimI	GG!GTC	4	27; 1908; 3695; 4488
SimI	!GACCC	4	106; 3189; 3757; 4005
SinI	G!GWCC	3	1289; 3277; 3722
SlaI	C!TCGAG	0	
SmaI	CCC!GGG	0	
SmiI	ATTT!AAAT	0	
SmiMI	CAYNN!NNRTG	2	365; 3198
SmlI	C!TYRAG	5	1643; 3152; 4034; 4311; 4573
SmoI	C!TYRAG	5	1643; 3152; 4034; 4311; 4573
SmuI	CCCGNNNN!	10	93; 119; 286; 1091; 1259; 2083; 2438; 2459; 3655; 3787
SmuI	!NNNNNNGCGGG	6	616; 2014; 2884; 3421; 3559; 3706
SnaBI	TAC!GTA	1	340
SpeI	A!CTAGT	0	
SphI	GCATG!C	3	2331; 2403; 3166
SrfI	GCCC!GGGC	0	
Sse9I	!AATT	10	18; 1511; 1575; 1653; 1679; 1690; 2337; 2409; 2501; 3919
Sse8387I	CCTGCA!GG	0	
Sse8647I	AG!GWCCCT	0	
SseBI	AGG!CCT	1	2582
SsiI	C!CGC	44	58; 86; 98; 112; 279; 507; 589; 612; 660; 1012; 1084; 1118; 1238; 1252; 1258; 1295; 1351; 1361; 1375; 1408; 2076; 2079; 2093; 2183; 2431; 2443; 2452; 2464; 2474; 2485; 2531; 2670; 2733; 3235; 3280; 3346; 3372; 3497; 3500; 3648; 3780; 4087; 4231; 4727
SsiI	G!CGG	30	370; 403; 528; 623; 647; 847; 1000; 1168; 1201; 1404; 2021; 2048; 2136; 2246; 2827; 2891; 2992; 2995; 3275; 3330; 3428; 3566; 3713; 3853; 4096; 4341; 4462; 4481; 4608; 4636
SspI	AAT!ATT	2	1669; 2222
SspDI	G!CGGCC	1	2760

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
SspD5I	GGTGANNNNNNNN!	5	376; 848; 1070; 3832; 3948
SspD5I	!NNNNNNNNNTCACC	3	958; 1877; 2938
SstI	GAGCT!C	0	
SstII	CCGC!GG	0	
SstE37I	CGAAGACNNNNNNNNNNNNNNNNNNNN!	0	
SstE37I	!NNNNNNNNNNNNNNNNNGTCTTCG	0	
Sth132I	CCCGNNNN!	24	92; 118; 285; 650; 940; 964; 1090; 1102; 1135; 1204; 1258; 1279; 1960; 2082; 2437; 2458; 2771; 3174; 3313; 3384; 3654; 3786; 4016; 4454
Sth132I	!NNNNNNNNCCGGG	19	15; 407; 470; 615; 1961; 2013; 2114; 2841; 2883; 2916; 3420; 3529; 3558; 3705; 3809; 3840; 4293; 4337; 4545
Sth302II	CC!GG	23	645; 694; 926; 1130; 1199; 1206; 1274; 1980; 2667; 2744; 2766; 2794; 2925; 3015; 3082; 3263; 3538; 3546; 3638; 4112; 4302; 4328; 4475
StrI	C!TCGAG	0	
StsI	GGATGNNNNNNNNNN!	4	2629; 3086; 3111; 3565
StsI	!NNNNNNNNNNNNNNCATCC	3	857; 914; 2433
StuI	AGG!CCT	1	2582
StyI	C!CWWGG	6	360; 703; 2490; 2583; 3193; 3598
StyD4I	!CCNGG	25	88; 281; 642; 817; 969; 1018; 1030; 1045; 1066; 1127; 1196; 1271; 2295; 2350; 2367; 2763; 2923; 3146; 3536; 3725; 3828; 4300; 4518; 4531; 4652
SwaI	ATTT!AAAT	0	
TaaI	ACN!GT	14	76; 198; 269; 543; 581; 758; 1852; 3141; 3257; 3365; 3688; 4179; 4649; 4720
TaiI	ACGT!	15	125; 137; 178; 261; 342; 447; 922; 1824; 1836; 1879; 1989; 2880; 3067; 3848; 3981
TaqI	T!CGA	17	748; 808; 832; 841; 1285; 1300; 1910; 2601; 2874; 3030; 3054; 3090; 3252; 3443; 3488; 3743; 4581
TaqII	GACCGANNNNNNNNNNN!	4	735; 1781; 2798; 3466
TaqII	!NNNNNNNNNTCGGTC	1	3710
TaqII	CACCCANNNNNNNNNNN!	1	831
TaqII	!NNNNNNNNNTGGGTG	3	172; 2665; 3257
TasI	!AATT	10	18; 1511; 1575; 1653; 1679; 1690; 2337; 2409; 2501; 3919
TatI	W!GTACW	5	217; 297; 330; 381; 1051
TauI	GCSG!C	27	614; 650; 662; 850; 1003; 1120; 1171; 1204; 1353; 1363; 1377; 1410; 2081; 2095; 2533; 2672; 2735; 2830; 2995; 2998; 3237; 3333; 3374; 3502; 3856; 4484; 4639
TfiI	G!AWTC	5	3246; 3380; 3490; 3527; 4705
TliI	C!TCGAG	0	
Tru1I	T!TAA	15	7; 1462; 1523; 1644; 1665; 1676; 1688; 1699; 1716; 1814; 2085; 3904; 3918; 3923; 3975
Tru9I	T!TAA	15	7; 1462; 1523; 1644; 1665; 1676; 1688; 1699; 1716; 1814; 2085; 3904; 3918; 3923; 3975
TscAI	CASTGNN!	7	661; 774; 1607; 2890; 4000; 4271; 4284
TseI	G!CWGC	17	614; 617; 620; 1163; 1537; 2056; 2721; 2822; 2864; 2905; 2998; 3385; 3838; 4064; 4270; 4273; 4338
TsoI	TARCCANNNNNNNNNNN!	2	1733; 2080
TsoI	!NNNNNNNNNTGGYTA	2	1538; 3290
Tsp45I	!GTSAC	3	2050; 2881; 3187
Tsp509I	!AATT	10	18; 1511; 1575; 1653; 1679; 1690; 2337; 2409; 2501; 3919
TspDTI	ATGAANNNNNNNNNNN!	4	840; 1519; 2820; 3524
TspDTI	!NNNNNNNNNTTCAT	5	26; 899; 3238; 3694; 3901
TspEI	!AATT	10	18; 1511; 1575; 1653; 1679; 1690; 2337; 2409; 2501; 3919
TspGWI	ACGGANNNNNNNNNNN!	1	3636
TspGWI	!NNNNNNNNNTCCGT	1	590
TspMI	C!CCGGG	0	
TspRI	CASTGNN!	7	661; 774; 1607; 2890; 4000; 4271; 4284
TstI	CACNNNNNNNTCCNNNNNNNNNNNN!	1	893
TstI	!NNNNNNNGGANNNNNNNNGTG	0	
TstI	GGANNNNNNGTGNNNNNNNNNNNN!	0	
TstI	!NNNNNNNNCACNNNNNNNTCC	1	861
Tth111I	GACN!NNGTC	1	2879
Tth111II	CAARCANNNNNNNNNNN!	3	960; 1353; 4088
Tth111II	!NNNNNNNNNTGYTTG	3	3196; 4056; 4095
UnbI	!GGNCC	15	82; 275; 640; 848; 1091; 1183; 1288; 1357; 1390; 1867; 3276; 3721; 3767; 3825; 3858

Enzyme name	Sequence	Count	Cutting Position (the base to the left of the cut site)
Van9II	CCANNNN!NTGG	1	680
Vha464I	C!TTAAG	1	1643
VneI	G!TGCAC	1	4365
VpaK11AI	!GGWCC	3	1288; 3276; 3721
VpaK11BI	G!GWCC	3	1289; 3277; 3722
VspI	AT!TAAT	1	7
XagI	CCTNN!NNNAGG	0	
XapI	R!AATTY	3	1575; 1679; 1690
XbaI	T!CTAGA	1	1415
XceI	RCATG!Y	6	599; 893; 2331; 2403; 3166; 4683
XcmI	CCANNNNN!NNNNTGG	0	
XhoI	C!TCGAG	0	
XhoII	R!GATCY	11	585; 670; 686; 1063; 2932; 3178; 3570; 3929; 3941; 4027; 4038
XmaI	C!CCGGG	0	
XmaJI	C!CTAGG	2	2583; 3598
XmiI	GT!MKAC	0	
XmnI	GAANN!NNTTC	0	
XspI	C!TAG	8	592; 1416; 1610; 2028; 2584; 3599; 3933; 4186
ZraI	GAC!GTC	4	123; 176; 259; 445
ZrmI	AGT!ACT	0	
Zsp2I	ATGCA!T	3	2333; 2405; 4736