Restriction enzymes and their isoschizomers

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INTRODUCTION

Since the last compilation of restriction enzymes (1), 300 new entries have been added including 12 new specificities. With the growing size of this database and the recognition that the most widespread use of the information is as a database for computer programs predicting restriction enzyme cleavage patterns, the new format has been continued. This format is intended to contain the minimal amount of information required by a computer program. It should be noted that only enzymes for which the recognition sequence is known are included. This new list is shown in the first Table, while an alphabetical listing of all Type II enzymes is presented in the second Table. A copy of the restriction enzyme data base in its previous format (2), including enzymes of unknown recognition sequence, will be available upon request. It should also be noted that an alternative compilation of these enzymes has recently been produced (3).

The database shown in these Tables is available online through the BIONET computer resource. A version corresponding to the printed text is located in the file <ROBERTS>RESTRICT.NAR. Several alternative versions are available and are documented in <ROBERTS>RESTRICT.DOC. It is also possible to get regular monthly updates by electronic mail. Enquiries should be directed to roberts@cshlab.bitnet.

In forming this list, all endonucleases cleaving DNA at a specific sequence have been considered to be restriction enzymes, although in most cases there is no direct genetic evidence for the presence of a restriction-modification system. The endonucleases are named in accordance with the proposal of Smith and Nathans (4).

ACKNOWLEDGEMENTS

Special thanks are due to all the individuals who have so kindly communicated their unpublished results to be included in this compilation. Work from the author's laboratory is supported by the NSF (DMB8613588) and the NIH (GM40537).

Type I enzymes

Enzyme	Recognition sequence	Me site ³		Reference
<i>EcoAI</i>	GAGNNNNNNNGTCA	2(6)	-3(6)	545,546
<i>EcoBI</i>	TGANNNNNNNTGCT	3(6)	-4(6)	547-551
<i>EcoDI</i>	TTANNNNNNNGTCY			552
<i>EcoDXXI</i>	TCANNNNNNNATTC			553,554
<i>EcoEI</i>	GAGNNNNNNNATGC			555,556
<i>EcoKI</i>	AACNNNNNNNGTGC	2(6)	-3(6)	557-560
<i>EcoR124/3I</i>	GAANNNNNNNRTCG		-3(6)	561
<i>EcoR124I</i>	GAANNNNNNNRTCG			561
<i>SrySBI</i>	GAGNNNNNNRTAYG	2(6)	-4(6)	562
<i>SrySJI</i>	GAGNNNNNNNGTRC			563
<i>SrySPI</i>	AACNNNNNNNGTRC	2(6)	-3(6)	562
<i>SrySQI</i>	AACNNNNNNRTAYG			564

Type II enzymes

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>AatII</i>		GACGT↓C		GMNPRU	5
<i>AccI</i>		GT↓MKAC		ABGIMNPRU	6
<i>Acyl</i>		GR↓CGYC		MR	7
	<i>AhaII</i>	GR↓CGYC		N	8
	<i>AosII</i>	GR↓CGYC			9
	<i>AstWI</i>	GR↓CGYC			10
	<i>AsuIII</i>	GR↓CGYC			10
	<i>BbiII</i>	GR↓CGYC		A	11
	<i>HgiDI</i>	GR↓CGYC			12
	<i>HgiGI</i>	GR↓CGYC			12
	<i>HgiHII</i>	GR↓CGYC			13
	<i>HinII</i>	GR↓CGYC			14
	<i>Hin8I</i>	GRCGYC			15
	<i>NlaSII</i>	GRCGYC			16
<i>AflIII</i>		C↓TTAAG		AGN	17
	<i>Esp4I</i>	C↓TTAAG			18
<i>AflIII</i>		A↓CRYGT		G	17
<i>AhaIII</i>		TTT↓AAA			19
	<i>DraI</i>	TTT↓AAA		ABGIMNPRU	20
<i>AluI</i>		AG↓CT	3(5)	ABGIMNPRU	21-24
	<i>MluI</i>	AG↓CT			25,26
	<i>OsuI</i>	AGCT			27
	<i>OsuNI</i>	AGCT			28
	<i>OxaI</i>	AGCT			29
<i>AlwNI</i>		CAGNNN↓CTG		N	30
<i>ApaI</i>		GGGCC↓C	4(5)	BGIMNPRU	31,32
	<i>Bsp120I</i>	GGGCCC			33
	<i>EciEI</i>	GGGCCC			34
<i>ApaLI</i>		G↓TGCAC		AGN	35
	<i>AmeI</i>	GTGCAC			27
	<i>SnoI</i>	G↓TGCAC			36,37
	<i>Uba44I</i>	G↓TGCAC			38
	<i>VneI</i>	G↓TGCAC			39

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>Asu</i> I		G↓GNCC		R	40
	<i>Apu</i> I	GGNCC			41
	<i>Bac</i> 36I	G↓GNCC			41
	<i>Bsp</i> BII	G↓GNCC			42
	<i>Cfr</i> 4I	GGNCC			43,44
	<i>Cfr</i> 8I	GGNCC			43,44
	<i>Cfr</i> 13I	G↓GNCC	4(5)	AU	43,45
	<i>Cfr</i> 23I	GGNCC			46
	<i>Cfr</i> 33I	GGNCC			47
	<i>Cfr</i> 45I	GGNCC			47
	<i>Cfr</i> 46I	GGNCC			47
	<i>Cfr</i> 47I	GGNCC			47
	<i>Cfr</i> 52I	GGNCC			48
	<i>Cfr</i> 54I	GGNCC			49
	<i>Cfr</i> NI	GGNCC			50
	<i>Eco</i> 39I	GGNCC			52
	<i>Eco</i> 47II	GGNCC			53
	<i>Eco</i> 196II	GGNCC			51
	<i>Eco</i> 201I	GGNCC			51
	<i>Gse</i> I	GGNCC			54
	<i>Hin</i> 5II	GGNCC			15
	<i>Mja</i> II	GGNCC			55
	<i>Nla</i> DII	GGNCC			56
	<i>Nmu</i> EII	GGNCC			57
	<i>Nmu</i> SI	GGNCC			58
	<i>Nsp</i> IV	G↓GNCC		P	59
	<i>Nsp</i> LII	GGNCC			60,61
	<i>Pse</i> I	GGNCC			62
	<i>Psp</i> I	GGNCC			63
	<i>Sau</i> 96I	G↓GNCC		BGMNR	64
	<i>Sdy</i> I	GGNCC			65
<i>Asu</i> II		TT↓CGAA		G	10,66
	<i>Aca</i> I	TTCGAA			67,68
	<i>Av</i> I	TTCGAA			62
	<i>Bsp</i> 82I	TTCGAA			69
	<i>Bsp</i> 119I	TTCGAA			48
	<i>Bst</i> BI	TT↓CGAA		N	70,71
	<i>Csp</i> 45I	TT↓CGAA		R	72,73
	<i>Fsp</i> II	TT↓CGAA			74
	<i>Lsp</i> I	TT↓CGAA			36,37
	<i>Mla</i> I	TT↓CGAA			75
	<i>Nsp</i> V	TTCGAA		AP	59
	<i>Nsp</i> BI	TTCGAA			76
	<i>Nsp</i> FI	TTCGAA			54
	<i>Nsp</i> JII	TTCGAA			60,68
	<i>Ssp</i> II	TT↓CGAA			77
<i>Ava</i> I		C↓YCGRG		ABGIMNPRU	78,79
	<i>Acr</i> I	CYCGRG			68
	<i>Aqu</i> I	C↓YCGRG	1(5)		80,81
	<i>Asp</i> BI	CYCGRG			76
	<i>Asp</i> CI	CYCGRG			76
	<i>Asp</i> DI	CYCGRG			76
	<i>Avr</i> I	CYCGRG			82

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>Bsr</i> SI	C↑YCGRG			70
	<i>Eco</i> 88I	CYCGRG			83
	<i>Nli</i> I	CYCGRG			76
	<i>Nmu</i> AI	CYCGRG			76
	<i>Nsp</i> III	C↑YCGRG		P	59
	<i>Nsp</i> DI	CYCGRG			76
	<i>Nsp</i> EI	CYCGRG			84
	<i>Nsp</i> SAI	C↑YCGRG			85
<i>Ava</i> II		G↑GWCC		ABGIMNPR	78,79,86,87
	<i>Afl</i> I	G↑GWCC			17
	<i>Asp</i> 697I	GGWCC			88
	<i>Asp</i> BII	GGWCC			76
	<i>Asp</i> CII	GGWCC			76
	<i>Asp</i> DII	GGWCC			76
	<i>Bam</i> NxI	G↑GWCC			89–91
	<i>Bme</i> 216I	G↑GWCC			92,93
	<i>Bsp</i> 100I	GGWCC			33
	<i>Bti</i> I	GGWCC			94
	<i>Cau</i> I	G↑GWCC			95,96
	<i>Cli</i> I	GGWCC			61
	<i>Cln</i> II	GGWCC			97
	<i>Eag</i> MI	G↑GWCC			98,99
	<i>Eco</i> 47I	G↑GWCC		U	53,100
	<i>Erp</i> I	G↑GWCC			41
	<i>Fdi</i> I	G↑GWCC			101,102
	<i>Fsp</i> MSI	G↑GWCC			41
	<i>Gsp</i> AI	GGWCC			103
	<i>Hgi</i> BI	G↑GWCC			12
	<i>Hgi</i> CII	G↑GWCC			12
	<i>Hgi</i> EI	G↑GWCC			12
	<i>Hgi</i> HIII	G↑GWCC			13
	<i>Hgi</i> JI	G↑GWCC			13
	<i>Hsp</i> 2I	GGWCC			48
	<i>Mfo</i> I	GGWCC			104
	<i>Msp</i> AI	GGWCC			104
	<i>Nli</i> II	GGWCC			76
	<i>Nmu</i> AII	GGWCC			76
	<i>Nsp</i> DII	GGWCC			76
	<i>Nsp</i> GI	GGWCC			60,68
	<i>Nsp</i> HII	GGWCC			76
	<i>Nsp</i> KI	GGWCC			60,61
	<i>Sfi</i> I	GGWCC			105
	<i>Sin</i> I	G↑GWCC	4(5)	R	62,107,108
	<i>Sin</i> AI	GGWCC			106
	<i>Sin</i> BI	GGWCC			106
	<i>Sin</i> CI	GGWCC			106
	<i>Sin</i> DI	GGWCC			106
	<i>Sin</i> EI	GGWCC			106
	<i>Sin</i> FI	GGWCC			106
	<i>Sin</i> GI	GGWCC			106
	<i>Sin</i> HI	GGWCC			106
	<i>Sin</i> JI	GGWCC			106
	<i>Tru</i> I	GGWCC			109

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>Ava</i> III		ATGCAT		G	110,111
	<i>Eco</i> T22I	ATGCA↓T		U	112
	<i>Nsi</i> I	ATGCA↓T		BMNR	113
<i>Avr</i> II		C↓CTAGG		N	82,114
<i>Bal</i> I		TGG↓CCA	4(5)	ABGIN	32,115
	<i>Msc</i> I	TGGCCA			27
<i>Bam</i> HI		G↓GATCC	5(4)	ABGIMNPRU	116–118
	<i>Aac</i> I	GGATCC			119
	<i>Aae</i> I	GGATCC			119
	<i>Aca</i> II	GGATCC			68
	<i>Acc</i> EBI	G↓GATCC			120
	<i>Ain</i> II	GGATCC			68
	<i>Ala</i> I	G↓GATCC			121
	<i>Ala</i> 12257I	GGATCC			122
	<i>Ala</i> 12258I	GGATCC			122
	<i>Asp</i> TII	GGATCC			68
	<i>Bam</i> FI	GGATCC			123
	<i>Bam</i> KI	GGATCC			123
	<i>Bam</i> NI	GGATCC			90
	<i>Bsp</i> 30I	GGATCC			33
	<i>Bsp</i> 46I	GGATCC			69
	<i>Bsp</i> 98I	GGATCC			33
	<i>Bst</i> I	G↓GATCC		GP	124,125
	<i>Bst</i> QI	GGATCC			70
	<i>Cel</i> I	GGATCC			68
	<i>Dds</i> I	GGATCC			126
	<i>Gdo</i> I	GGATCC			119
	<i>Gin</i> I	GGATCC			127
	<i>Gox</i> I	GGATCC			119
	<i>Gse</i> III	GGATCC			54
	<i>Mle</i> I	GGATCC			25
	<i>Nas</i> BI	GGATCC			25
	<i>Nsp</i> SAIV	G↓GATCC			85
	<i>Pae</i> 177I	GGATCC			51
	<i>Rhs</i> I	GGATCC			128
	<i>Rlu</i> 4I	GGATCC			129
<i>Bbv</i> I		GCAGC(8/12) 2(5), –2(5)		GIN	116,130–132
	<i>Alw</i> XI	GCAGC(8/12)			133
<i>Bbv</i> II		GAAGAC(2/6)			134
<i>Bce</i> II		ACGGC(12/13)			135
<i>Bcl</i> I		T↓GATCA		BGIMNPU	136
	<i>Atu</i> CI	TGATCA			137
	<i>Bsp</i> XII	T↓GATCA			138
	<i>Bst</i> GI	TGATCA			139
	<i>Bst</i> KI	TGATCA			70
	<i>Cpe</i> I	TGATCA			140
	<i>Cth</i> I	TGATCA			141
	<i>Fba</i> I	TGATCA			105
	<i>Pov</i> I	T↓GATCA			98,142
	<i>Sse</i> I	TGATCA			54
	<i>Sst</i> IV	TGATCA			143
<i>Bgl</i> II		GCCNNNN↓NGGC		BGIMNPRU	144–148
	<i>Van</i> I	GCCNNNNNGGC			149

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>Bgl</i> II		A↓GATCT		ABGIMNPRU	144,148,150
	<i>Nsp</i> MACI	A↓GATCT			151
<i>Bin</i> I		GGATC(4/5)			152
	<i>Alw</i> I	GGATC(4/5)		N	153
	<i>Bth</i> II	GGATC			154
<i>Bsa</i> AI		YACGTR		N	71
<i>Bsa</i> BI		GATNNNNATC			155
<i>Bse</i> PI		GCGCGC			139
	<i>Bso</i> PI	GCGCGC			139
	<i>Bsr</i> HI	GCGCGC			139
	<i>Bss</i> HII	G↓CGCGC		GNU	139,156
	<i>Eco</i> 143I	GCGCGC			129
	<i>Esp</i> 7I	GCGCGC			69
	<i>Esp</i> 8I	GCGCGC			69
	<i>Kpn</i> 30I	GCGCGC			157
<i>Bsm</i> I		GAATGC(1/−1)		GN	66
<i>Bsm</i> AI		GTCTC		N	71
	<i>Uba</i> 26I	GTCTC(1/5)			158
<i>Bsp</i> HI		T↓CATGA		N	159
	<i>Rsp</i> XI	T↓CATGA		G	160
<i>Bsp</i> MI		ACCTGC(4/8)		N	153,161
<i>Bsp</i> MII		T↓CCGGA		N	153,161
	<i>Acc</i> III	T↓CCGGA		AGR	66,162
	<i>Bbf</i> 7411I	TCCGGA			163
	<i>Bla</i> 7920I	TCCGGA			163
	<i>Cau</i> B3I	T↓CCGGA			164
	<i>Kpn</i> 2I	T↓CCGGA			33,165
	<i>Mro</i> I	T↓CCGGA		U	166
<i>Bsr</i> I		ACTGG(1/−1)		N	167
<i>Bst</i> EII		G↓GTNACC		BGMNPU	168,169
	<i>Acr</i> II	G↓GTNACC			68
	<i>Asp</i> AI	G↓GTNACC			36
	<i>Bst</i> 31I	GGTNACC			170
	<i>Bst</i> DI	GGTNACC			70
	<i>Bst</i> PI	G↓GTNACC			171
	<i>Cfr</i> 7I	GGTNACC			43
	<i>Cfr</i> 19I	GGTNACC			47
	<i>Eca</i> I	G↓GTNACC			172
	<i>Eco</i> 91I	G↓GTNACC			173,174
	<i>Eco</i> O65I	G↓GTNACC		G	175,176
	<i>Kox</i> I	GGTNACC			177
	<i>Nsp</i> SAII	G↓GTNACC			85
	<i>Sci</i> AI	GGTNACC			68
<i>Bst</i> XI		CCANNNNN↓NTGG		GNRU	139,178
	<i>Bss</i> GI	CCANNNNNNTGG			139
	<i>Bst</i> TI	CCANNNNNNTGG			139
<i>Cau</i> II		CC↓SGG			95,96,179
	<i>Aha</i> I	CC↓SGG			8
	<i>Ase</i> II	CC↓SGG			180
	<i>Asp</i> 1I	CCSGG			129
	<i>Bcn</i> I	CC↓SGG	2(4)	A	181–186
	<i>Bsp</i> 7I	CCSGG			33
	<i>Bsp</i> 8I	CCSGG			33

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>Bsp55I</i>	CCSGG			69
	<i>EciDI</i>	CCSGG			34
	<i>Eco121I</i>	CCSGG			187
	<i>Eco179I</i>	CCSGG			51
	<i>Eco190I</i>	CCSGG			187
	<i>HgiS21I</i>	CCSGG			188
	<i>Hin3I</i>	CCSGG			189
	<i>NciI</i>	CC↓SGG		BGMNU	190,191
	<i>Pae181I</i>	CCSGG			51
	<i>RshII</i>	CCSGG			93
	<i>Ssp2I</i>	CCSGG			129
	<i>Tmu1I</i>	CCSGG			173
<i>CfrI</i>		Y↓GGCCR	4(5)		44,186,192,193
	<i>Cfr14I</i>	YGGCCR			43
	<i>Cfr38I</i>	YGGCCR			46
	<i>Cfr39I</i>	YGGCCR			47
	<i>Cfr40I</i>	YGGCCR			47
	<i>EaeI</i>	Y↓GGCCR	4(5)	GMN	194,195
	<i>EciBI</i>	YGGCCR			34
	<i>Eco90I</i>	YGGCCR			173
	<i>Eco164I</i>	YGGCCR			129
	<i>EcoHI</i>	YGGCCR			28
<i>Cfr10I</i>		R↓CCGGY	2(5)	AU	43,44,186,196
	<i>Bsp21I</i>	RCCGGY			173
<i>ClaI</i>		AT↓CGAT	5(6)	ABGMNPR	197,198
	<i>Asp707I</i>	ATCGAT			88
	<i>BanIII</i>	ATCGAT		U	5
	<i>BcmI</i>	AT↓CGAT			199
	<i>BdiI</i>	AT↓CGAT			200
	<i>BliRI</i>	ATCGAT			201
	<i>BscI</i>	AT↓CGAT			36,202
	<i>Bsp2I</i>	ATCGAT			33
	<i>Bsp4I</i>	ATCGAT			33
	<i>Bsp84I</i>	ATCGAT			69
	<i>Bsp106I</i>	AT↓CGAT			203
	<i>BspXI</i>	AT↓CGAT			138
	<i>Csp4I</i>	ATCGAT			69
<i>CviJI</i>		RG↓CY	3(5)		204,205
	<i>CviKI</i>	RGCY			206
	<i>CviLI</i>	RGCY			206
	<i>CviMI</i>	RGCY			206
	<i>CviNI</i>	RGCY			206
	<i>CviOI</i>	RGCY			206
<i>DdeI</i>		C↓TNAG	1(5)	BGIMNPRU	207–209
<i>DpnI*</i>		GA↓TC		ABGIMNR	210–212
	<i>CfuI*</i>	GA↓TC			213,214
	<i>NanII*</i>	GATC			215
	<i>NgoDIII*</i>	GATC			216
	<i>NmuDI*</i>	GATC			57
	<i>NmuEI*</i>	GATC			217
	<i>NsuDI*</i>	GATC			57
<i>DraII</i>		RG↓GNCCY		GM	218–220

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>Eco</i> O109I	RG↓GNCCY		AGNU	221
	<i>Pss</i> I	RGGNC↓CY		I	126,222
	<i>Vne</i> AI	RGGNCCY			149
<i>Dra</i> III		CACNNN↓GTG		MN	218–220
<i>Drd</i> I		GACNNNN↓NNGTC		N	223
<i>Drd</i> II		GAACCA			223
<i>Dsa</i> I		C↓CRYGG			224
<i>Eci</i> I		TCCGCC			34
<i>Eco</i> 31I		GGTCTC(1/5)			225
	<i>Bsa</i> I	GGTCTC			71
	<i>Eco</i> 42I	GGTCTC			187
	<i>Eco</i> 51I	GGTCTC			129
	<i>Eco</i> 95I	GGTCTC			226
	<i>Eco</i> 97I	GGTCTC			227
	<i>Eco</i> 101I	GGTCTC			187
	<i>Eco</i> 120I	GGTCTC			187
	<i>Eco</i> 127I	GGTCTC			51
	<i>Eco</i> 129I	GGTCTC			51
	<i>Eco</i> 155I	GGTCTC			187
	<i>Eco</i> 156I	GGTCTC			187
	<i>Eco</i> 157I	GGTCTC			187
	<i>Eco</i> 162I	GGTCTC			51
	<i>Eco</i> 185I	GGTCTC			51
	<i>Eco</i> 191I	GGTCTC			187
	<i>Eco</i> 203I	GGTCTC			187
	<i>Eco</i> 204I	GGTCTC			187
	<i>Eco</i> 205I	GGTCTC			187
	<i>Eco</i> 217I	GGTCTC			48
	<i>Eco</i> 225I	GGTCTC			129
	<i>Eco</i> 233I	GGTCTC			33
	<i>Eco</i> 239I	GGTCTC			129
	<i>Eco</i> 240I	GGTCTC			48
	<i>Eco</i> 241I	GGTCTC			48
	<i>Eco</i> 246I	GGTCTC			33
	<i>Eco</i> 247I	GGTCTC			33
	<i>Ppa</i> I	GGTCTC			153
	<i>Sau</i> 12I	GGTCTC			173
<i>Eco</i> 47III		AGC↓GCT		AU	53
	<i>Ait</i> I	AGC↓GCT			228
<i>Eco</i> 57I		CTGAAG(16/14)			229
	<i>Bsp</i> 6II	CTGAAG			173
	<i>Eco</i> 125I	CTGAAG			51
	<i>Fsf</i> I	CTGAAG			230
<i>Eco</i> NI		CCTNN↓NNNAGG		N	231
	<i>Bst</i> WI	CCTNNNNNAGG			71
<i>Eco</i> RI		G↓AATTC	3(6)	ABGIMNPRU	232–234
	<i>Eco</i> 82I	GAATTC			226
	<i>Eco</i> 159I	GAATTC			51
	<i>Eco</i> 228I	GAATTC			48
	<i>Eco</i> 237I	GAATTC			129
	<i>Eco</i> 252I	GAATTC			129
	<i>Rsa</i> I	G↓AATTC			235–237
	<i>Sso</i> I	G↓AATTC	2(6)		238,239

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>EcoRII</i> ⁵		↓CCWGG	2(5)	BG	240–242
	<i>AeuI</i>	CC↓WGG			243
+	<i>AorI</i>	CC↓WGG			119
+	<i>ApyI</i>	CC↓WGG		M	244
	<i>AtuI</i>	CCWGG			173
	<i>AtuBI</i>	CCWGG			245
	<i>AtuII</i>	CCWGG			246
	<i>BinSI</i>	CCWGG			154
+	<i>Bsp56I</i>	CCWGG			69
	<i>Bsp103I</i>	CCWGG			33
	<i>BstGII</i>	CCWGG			139
+	<i>BstNI</i>	CC↓WGG		N	247
	<i>BstOI</i>	CCWGG			70
	<i>Cdi27I</i>	CCWGG			157
	<i>Cfr5I</i>	CCWGG			43,44
	<i>Cfr11I</i>	CCWGG			43,44
	<i>Cfr20I</i>	CCWGG			47
	<i>Cfr22I</i>	CCWGG			47
	<i>Cfr24I</i>	CCWGG			47
	<i>Cfr25I</i>	CCWGG			47
	<i>Cfr27I</i>	CCWGG			47
	<i>Cfr28I</i>	CCWGG			47
	<i>Cfr29I</i>	CCWGG			47
	<i>Cfr30I</i>	CCWGG			47
	<i>Cfr31I</i>	CCWGG			47
	<i>Cfr35I</i>	CCWGG			47
	<i>CfrS37I</i>	CCWGG			188
	<i>CthII</i>	CC↓WGG			248
	<i>EagKI</i>	CCWGG			249
	<i>EcaII</i>	CCWGG			66
	<i>EclII</i>	CCWGG			250
	<i>Ecl66I</i>	CCWGG			227
	<i>Ecl136I</i>	CCWGG			51
	<i>Ecl137II</i>	CCWGG			187
	<i>EclS39I</i>	CCWGG			188
	<i>Eco38I</i>	CCWGG			52
	<i>Eco40I</i>	CCWGG			52
	<i>Eco41I</i>	CCWGG			52
	<i>Eco60I</i>	CCWGG			44
	<i>Eco61I</i>	CCWGG			44
	<i>Eco67I</i>	CCWGG			226
	<i>Eco70I</i>	CCWGG			226
	<i>Eco71I</i>	CCWGG			251
	<i>Eco128I</i>	CCWGG			51
	<i>Eco170I</i>	CCWGG			129
	<i>Eco193I</i>	CCWGG			187
	<i>Eco206I</i>	CCWGG			33
	<i>Eco207I</i>	CCWGG			33
	<i>Esp2I</i>	CCWGG			33
	<i>Fsp1604I</i>	CC↓WGG			252
	<i>Kox165I</i>	CCWGG			129
	<i>Kpn10I</i>	CCWGG			51
	<i>Kpn13I</i>	CCWGG			51

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>Kpn</i> 14I	CCWGG			187
	<i>Kpn</i> 16I	CCWGG			187
	<i>Mph</i> I	CCWGG			253
+	<i>Mva</i> I	CC↓WGG	2(4)	AU	254,255
	<i>Sgr</i> II	CCWGG			256
	<i>Taq</i> XI	CC↓WGG			257
	<i>Zan</i> I	CC↓WGG			258
<i>Eco</i> RV		GAT↓ATC	2(6)	ABGIMNPRU	259–261
	<i>Bsp</i> 16I	GATATC			33
	<i>Bst</i> RI	GATATC			70
	<i>Ceq</i> I	GAT↓ATC			262
	<i>Eco</i> 32I	GAT↓ATC			44,263
	<i>Eco</i> 178I	GATATC			51
	<i>Hja</i> I	GAT↓ATC			264
	<i>Nan</i> I	GATATC			215
	<i>Nfi</i> AI	GATATC			265
	<i>Nsi</i> CI	GAT↓ATC			266
<i>Esp</i> I		GC↓TNAGC		G	267
	<i>Cell</i> II	GCTNAGC		M	68
	<i>Sar</i> I	GCTNAGC			268
<i>Esp</i> 3I		GAGACG			69
<i>Fin</i> I		GTCCC			153
<i>Fnu</i> 4HI		GC↓NGC		N	269
	<i>Bsp</i> 6I	GC↓NGC			270
	<i>Fbr</i> I	GC↓NGC			105
	<i>Uur</i> 960I	GC↓NGC			271
<i>Fnu</i> DII		CG↓CG			272
	<i>Acc</i> II	CG↓CG		AG	6,273
	<i>Bce</i> FI	CGCG			274
	<i>Bce</i> RI	CGCG			123
	<i>Bep</i> I	CG↓CG	1(5)		275,276
	<i>Bsp</i> 50I	CGCG			69
	<i>Bsp</i> 70I	CGCG			69
	<i>Bst</i> UI	CG↓CG		N	70
	<i>Bsu</i> 1192II	CGCG			65
	<i>Bsu</i> 1193I	CGCG			65,123
	<i>Bsu</i> 1532I	CG↓CG			277
	<i>Bsu</i> 6633I	CGCG			123,278
	<i>Bsu</i> EII	CGCG	1(5)		65,279,280
	<i>Cpa</i> AI	CGCG			281
	<i>Fsp</i> MI	CGCG			153
	<i>Hin</i> 1056I	CGCG			282
	<i>Mva</i> AI	CGCG			104
	<i>Mvn</i> I	CG↓CG			283
	<i>Pfi</i> AI	CGCG			27
	<i>Sce</i> I	CGCG			68
	<i>Tha</i> I	CG↓CG		BI	284
<i>Fok</i> I		GGATG(9/13)	3(6)	AGIMN	285,286
	<i>Hin</i> GUII	GGATG			287–289
<i>Gdi</i> II		YGGCCG(–5/–1)			290
<i>Gsu</i> I		CTGGAG(16/14)			229,291
	<i>Bco</i> 35I	CTGGAG			48

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>Bsp22I</i>	CTGGAG			173
	<i>Bsp28I</i>	CTGGAG			33
<i>HaeI</i>		WGG↓CCW			292
<i>HaeII</i>		RGCGC↓Y		ABGIMNP	293,294
	<i>Bme142I</i>	RGCGC↓Y			295
	<i>HinHI</i>	RGCGCY			296
	<i>NgoI</i>	RGCGCY			297
<i>HaeIII</i>		GG↓CC	3(5)	ABGIMNPRU	298–300
	<i>AcaIV</i>	GGCC			68
	<i>Asp742I</i>	GGCC			188
	<i>AspTIII</i>	GGCC			68
	<i>Bce71I</i>	GGCC			301
	<i>Bco33I</i>	GGCC			33
	<i>BluI</i>	GGCC			302
	<i>BluII</i>	GGCC			290
	<i>BseI</i>	GGCC			303
	<i>BshI</i>	GGCC			103
	<i>BshAI</i>	GGCC			103
	<i>BshBI</i>	GGCC			103
	<i>BshCI</i>	GGCC			103
	<i>BshDI</i>	GGCC			103
	<i>BshEI</i>	GGCC			103
	<i>BshFI</i>	GGCC			103
	<i>Bsp71I</i>	GGCC			301
	<i>Bsp211I</i>	GG↓CC			301
	<i>Bsp226I</i>	GGCC			301
	<i>BspRI</i>	GG↓CC			304–306
	<i>BssCI</i>	GGCC			139
	<i>BstCI</i>	GGCC			139
	<i>BstII</i>	GGCC			70
	<i>Bsu1076I</i>	GGCC			123
	<i>Bsu1114I</i>	GGCC			123
	<i>BsuRI</i>	GG↓CC	3(5)	G	300,307,308
	<i>BteI</i>	GGCC			309
	<i>ClnI</i>	GGCC			97
	<i>CltI</i>	GG↓CC			310
	<i>Csp2I</i>	GGCC			49
	<i>DsaII</i>	GG↓CC			224
	<i>FinSI</i>	GGCC			105
	<i>FnuDI</i>	GG↓CC			272
	<i>HhgI</i>	GGCC			66
	<i>MniI</i>	GGCC			253
	<i>MnnII</i>	GGCC			311
	<i>NgoII</i>	GGCC			312
	<i>NgoPII</i>	GG↓CC			266
	<i>NgoSI</i>	GGCC			313
	<i>NlaI</i>	GGCC			314
	<i>PaiI</i>	GGCC			127
	<i>PalI</i>	GG↓CC		P	315,316
	<i>PpuI</i>	GGCC			127
	<i>SfaI</i>	GG↓CC			317
	<i>SpIII</i>	GGCC			318

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>SuaI</i>	GG CC			319
	<i>SuII</i>	GGCC			320
	<i>TspZNI</i>	GGCC			321
	<i>TreAI</i>	GGCC			322
	<i>TmI</i>	GGCC			102
	<i>VhaI</i>	GGCC			128
	<i>VniI</i>	GGCC			149
<i>HgaI</i>		GACGC(5/10)		N	217,296,323
<i>HgiAI</i>		GWGCW C		N	324
	<i>AspHI</i>	GWGCW C		M	325
	<i>Uba2II</i>	GWGCW C			38
<i>HgiCI</i>		G GYRCC			12,326
	<i>BanI</i>	G GYRCC		GIMNPU	5,326
	<i>Eco50I</i>	GGYRCC			129
	<i>Eco64I</i>	G GYRCC			226,327
	<i>Eco168I</i>	GGYRCC			187
	<i>Eco169I</i>	GGYRCC			129
	<i>Eco171I</i>	GGYRCC			51
	<i>Eco173I</i>	GGYRCC			51
	<i>Eco195I</i>	GGYRCC			187
	<i>Esp1I</i>	GGYRCC			48
	<i>Esp6I</i>	GGYRCC			69
	<i>Esp9I</i>	GGYRCC			69
	<i>Esp10I</i>	GGYRCC			69
	<i>Esp11I</i>	GGYRCC			69
	<i>Esp12I</i>	GGYRCC			69
	<i>Esp13I</i>	GGYRCC			69
	<i>Esp14I</i>	GGYRCC			69
	<i>Esp15I</i>	GGYRCC			129
	<i>Esp22I</i>	GGYRCC			129
	<i>HgiHI</i>	G GYRCC			13
<i>HgiEII</i>		ACCNNNNNNGGT			12
<i>HgiIII</i>		GRG C C			13
	<i>BanII</i>	GRG C C		GIMNPRU	5
	<i>Bsp117I</i>	GRG C C			33
	<i>Bsu1854I</i>	GRG C C			277
	<i>BvuI</i>	GRG C C			328
	<i>Cfr48I</i>	GRG C C			47
	<i>Eco24I</i>	GRG C C			157,329
	<i>Eco25I</i>	GRG C C			157
	<i>Eco26I</i>	GRG C C			44
	<i>Eco35I</i>	GRG C C			157
	<i>Eco68I</i>	GRG C C			227
	<i>Eco113I</i>	GRG C C			187
	<i>Eco180I</i>	GRG C C			51
	<i>Eco211I</i>	GRG C C			33
	<i>Eco215I</i>	GRG C C			173
	<i>Eco216I</i>	GRG C C			173
	<i>Eco232I</i>	GRG C C			48
	<i>EcoT38I</i>	GRG C C			112
	<i>EcoT88I</i>	GRG C C			330
	<i>EcoT93I</i>	GRG C C			330
	<i>EcoT95I</i>	GRG C C			330

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference			
<i>HhaI</i>	<i>KoxII</i>	GRGCTC	2(5)	ABGNPRU	177			
	<i>BcaI</i>	GCGC			331,332			
	<i>CfoI</i>	GCGCTC			28			
	<i>FnuDIII</i>	GCGCTC			BIMR	126		
	<i>Hin6I</i>	GTCGC			272			
	<i>Hin7I</i>	GCGC			333			
	<i>HinGUI</i>	GCGC			15			
	<i>HinPII</i>	GTCGC			289,334			
	<i>HinS1I</i>	GCGC			335			
	<i>HinS2I</i>	GCGC			335			
	<i>MnnIV</i>	GCGC			335			
<i>HindII</i>	<i>SciNI</i>	GTCGC	5(6)	M	311			
		GTCGTAC			336			
	<i>ChuII</i>	GTyrAC			337–340			
	<i>Hin1160II</i>	GTyrAC			341			
	<i>Hin1161II</i>	GTyrAC			282			
	<i>HinJCI</i>	GTyTAC			282			
	<i>HincII</i>	GTyTAC			342			
	<i>MnnI</i>	GTyrAC			ABGINPRU	343		
		ATAGCTT			311			
	<i>HindIII</i>	<i>Asp52I</i>			AAGCTT	1(6)	ABGIMNPRU	337,338,344
		<i>BbrI</i>			AAGCTT			188
<i>BpeI</i>		AAGCTT	66					
<i>BstFI</i>		ATAGCTT	345,346					
<i>Cfr32I</i>		AAGCTT	347					
<i>ChuI</i>		AAGCTT	47					
<i>Eco65I</i>		AAGCTT	341					
<i>Eco98I</i>		AAGCTT	227					
<i>Eco188I</i>		AAGCTT	227					
<i>Eco231I</i>		AAGCTT	187					
<i>EcoVIII</i>		ATAGCTT	48					
<i>Hin5III</i>		AAGCTT	348					
<i>Hin173I</i>		AAGCTT	15					
<i>Hin1076III</i>		AAGCTT	289					
<i>HinJCI</i>		AAGCTT	282					
<i>HinbIII</i>		AAGCTT	342					
<i>HinfII</i>		AAGCTT	66,349					
<i>HsuI</i>		ATAGCTT	350					
<i>MkiI</i>		AAGCTT	66					
<i>HinfI</i>			GATNC	ABGIMNPRU	253			
	<i>CviBI</i>	GATNC	349,351,352					
	<i>CviCI</i>	GATNC	353					
	<i>CviDI</i>	GATNC	353					
	<i>CviEI</i>	GATNC	353					
	<i>CviFI</i>	GATNC	353					
	<i>CviGI</i>	GATNC	353					
	<i>FnuAI</i>	GATNC	272					
	<i>HhaII</i>	GATNC	2(6)		354–356			
	<i>NcaI</i>	GATNC			357			
	<i>NovII</i>	GATNC			357			
<i>HpaI</i>	<i>NsiHI</i>	GATNC	5(6)	ABGIMNPRU	358			
		GTTTAAC			359–361			

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>Hpa</i> II	<i>Bse</i> II	GTTAAC			303
		C↓CGG	2(5)	BGMNPRU	298,359,360
	<i>Asp</i> 748I	CCGG			188
	<i>Bsp</i> 5I	CCGG			33
	<i>Bsp</i> 47I	CCGG			69
	<i>Bsp</i> 48I	CCGG			69
	<i>Bsp</i> 116I	CCGG			33
	<i>Bsu</i> 1192I	CCGG			65,123
	<i>Bsu</i> FI	CCGG	1(5)		65,123,279
	<i>Fin</i> II	CCGG			153
	<i>Hap</i> II	C↓CGG		AGI	296,362
	<i>Hin</i> 2I	CCGG			189
	<i>Hin</i> 5I	CCGG			15
	<i>Mni</i> II	CCGG			253
	<i>Mno</i> I	C↓CGG			66,363
	<i>Msp</i> I	C↓CGG	1(5)	ABGIMNPRU	132,364,365
	<i>Sec</i> II	CCGG			366
	<i>Sfa</i> GUI	CCGG			367
<i>Hph</i> I		GGTGA(8/7)	-2(5)	N	349,368,369
<i>Kpn</i> I	<i>Ngo</i> BI	GGTGA	-2(5)		371,372
		GGTAC↓C		ABGIMNPRU	373,374
	<i>Asp</i> 718I	G↓GTACC		M	375
	<i>Eco</i> 149I	GGTACC			51
	<i>Esp</i> 19I	GGTACC			48
	<i>Kpn</i> K14I	GGTACC			188
	<i>Nmi</i> I	GGTACC			376
	<i>Sau</i> 10I	GGTACC			173
	<i>Sth</i> I	G↓GTACC			377,378
	<i>Sth</i> AI	GGTACC			106
	<i>Sth</i> BI	GGTACC			106
	<i>Sth</i> CI	GGTACC			106
	<i>Sth</i> DI	GGTACC			106
	<i>Sth</i> EI	GGTACC			106
	<i>Sth</i> FI	GGTACC			106
	<i>Sth</i> GI	GGTACC			106
	<i>Sth</i> HI	GGTACC			106
	<i>Sth</i> JI	GGTACC			106
	<i>Sth</i> KI	GGTACC			106
	<i>Sth</i> LI	GGTACC			106
	<i>Sth</i> MI	GGTACC			106
	<i>Sth</i> NI	GGTACC			330,377
<i>Ksp</i> 632I		CTCTTC(1/4)		M	379
	<i>Ear</i> I	CTCTTC(1/4)		N	380
<i>Mae</i> I		C↓TAG		M	381
	<i>Mja</i> I	CTAG			55
<i>Mae</i> II		A↓CGT		M	381
<i>Mae</i> III		↓GTNAC		M	381
<i>Mbo</i> I ⁶		↓GATC		BGINP	382
+	<i>Bce</i> 243I	↓GATC			383
	<i>Bsa</i> PI	GATC			139
	<i>Bsp</i> 9I	GATC			33
	<i>Bsp</i> 18I	GATC			33
+	<i>Bsp</i> 49I	GATC			69

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
+	<i>Bsp51I</i>	GATC			69
+	<i>Bsp52I</i>	GATC			69
+	<i>Bsp54I</i>	GATC			69
+	<i>Bsp57I</i>	GATC			69
+	<i>Bsp58I</i>	GATC			69
+	<i>Bsp59I</i>	GATC			69
+	<i>Bsp60I</i>	GATC			69
+	<i>Bsp61I</i>	GATC			69
+	<i>Bsp64I</i>	GATC			301
+	<i>Bsp65I</i>	GATC			69
+	<i>Bsp66I</i>	GATC			69
+	<i>Bsp67I</i>	↓GATC			301
+	<i>Bsp72I</i>	GATC			69
	<i>Bsp74I</i>	GATC			301
	<i>Bsp76I</i>	GATC			301
+	<i>Bsp91I</i>	GATC			69
	<i>Bsp105I</i>	↓GATC			301
+	<i>Bsp122I</i>	GATC			69
+	<i>BspAI</i>	↓GATC			42
+	<i>BsrPII</i>	GATC			139
	<i>BssGII</i>	GATC			139
	<i>BstEIII</i>	GATC			66,169,384
	<i>BstXII</i>	GATC			139
	<i>CpaI</i>	GATC			306
+	<i>CpfI</i>	↓GATC			220
+	<i>Csp5I</i>	GATC			69
	<i>CtyI</i>	GATC			281
	<i>CviAI</i>	↓GATC	2(6)		385,386
	<i>CviBII</i>	GATC			387
	<i>CviHI</i>	GATC			206
	<i>DpnII</i>	GATC			210,212
	<i>FnuAII</i>	GATC			66,272
	<i>FnuCI</i>	↓GATC			272
+	<i>FnuEI</i>	↓GATC			272
	<i>HacI</i>	↓GATC			388
	<i>MeuI</i>	GATC			25
	<i>MkrAI</i>	GATC			389
	<i>MmeII</i>	GATC			390
	<i>MnoIII</i>	GATC			66
	<i>MosI</i>	GATC			382
	<i>Msp67II</i>	GATC			41
+	<i>MspBI</i>	GATC			104
	<i>MthI</i>	GATC			139
	<i>MthAI</i>	GATC			104
	<i>NdeII</i>	↓GATC		BG	357
	<i>NfiAII</i>	GATC			265
	<i>NfiBI</i>	GATC			391
	<i>NfiI</i>	GATC			357
	<i>NlaDI</i>	GATC			56
	<i>NlaII</i>	↓GATC			314
	<i>NmeCI</i>	↓GATC			266
	<i>NphI</i>	↓GATC			266
	<i>NsiAI</i>	GATC			392

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>NspAI</i>	GATC			25
	<i>NsuI</i>	GATC			57
	<i>PfaI</i>	GATC			365
	<i>RluI</i>	GATC			173
	<i>SalAI</i>	GATC			231
	<i>SalHI</i>	GATC			231
+	<i>Sau3AI</i>	↓GATC	4(5)	ABGIMNPRU	393,394
	<i>Sau6782I</i>	GATC			395
+	<i>SauCI</i>	GATC			396
+	<i>SauDI</i>	GATC			396
+	<i>SauEI</i>	GATC			396
+	<i>SauFI</i>	GATC			396
+	<i>SauGI</i>	GATC			396
+	<i>SauMI</i>	GATC			397
	<i>SinMI</i>	GATC			57
	<i>TruII</i>	GATC			109
<i>MboII</i>		GAAGA(8/7)	5(6)	BGINP	382,398–400
	<i>NcuI</i>	GAAGA			401
	<i>TceI</i>	GAAGA			320
<i>MfeI</i>		CAATTG			402
<i>MluI</i>		A↓CGCGT		ABGIMNPRU	285
	<i>ApeI</i>	ACGCGT			231
	<i>Uba6I</i>	ACGCGT			48
<i>MlyI</i>		GATC			37
<i>MmeI</i>		TCCRAC(20/18)			390
<i>MnlI</i>		CCTC(7/7)		GN	132,403
<i>MseI</i>		T↓TAA		N	404
<i>MstI</i>		TGC↓GCA			130,405
	<i>AcaIII</i>	TGCGCA			68
	<i>AosI</i>	TGC↓GCA		G	9
	<i>AviII</i>	TGC↓GCA		M	62
	<i>ClcII</i>	TGCGCA			68
	<i>CliII</i>	TGCGCA			61
	<i>FdiII</i>	TGC↓GCA			101,102
	<i>FspI</i>	TGC↓GCA		GN	74,406
	<i>GspAII</i>	TGCGCA			103
	<i>NspHIII</i>	TGCGCA			62
	<i>NspLI</i>	TGCGCA			60,61
	<i>NspMI</i>	TGCGCA			60,68
<i>MwoI</i>		GCNNNNN↓NNGC			407
<i>NaeI</i>		GCC↓GGC		GMNU	408
	<i>AmeII</i>	GCCGGC			27
	<i>AniMI</i>	GCCGGC			153
	<i>ApeAI</i>	GCCGGC			27
	<i>AprI</i>	GCCGGC			25
	<i>Eco56I</i>	G↓CCGGC			44,409
	<i>Esp5I</i>	GCCGGC			173
	<i>MisI</i>	GCCGGC			169
	<i>NasWI</i>	GCCGGC			25
	<i>NbaI</i>	GCCGGC			65
	<i>NbrI</i>	GCCGGC			65
	<i>NgoMI</i>	GCCGGC			410
	<i>NmuFI</i>	GCCGGC			57

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>NmuI</i>	GCCGGC			357
	<i>NspWI</i>	GCCGGC			25
	<i>NtaSII</i>	GCCGGC			105
	<i>PglI</i>	GCCGGC			411
	<i>Psp61I</i>	GCCGGC			41
	<i>RluI</i>	GCCGGC			412–414
	<i>SacAI</i>	GCCGGC			50
	<i>SalCI</i>	GCCGGC			27
	<i>SaoI</i>	GCCGGC			415
	<i>SauAI</i>	GCCGGC			391
	<i>SauBMKI</i>	GCCGGC			416
	<i>SkaI</i>	GCCGGC			57
<i>NarI</i>		GG↓CGCC		BGNP	417
	<i>BbeAI</i>	GGCGCC			154
	<i>BbeI</i>	GGCGC↓C		A	418
	<i>BinSII</i>	GGCGCC			154
	<i>Eco78I</i>	GGC↓GCC			419
	<i>EheI</i>	GGC↓GCC			420,421
	<i>NamI</i>	GGCGCC			422
	<i>NdaI</i>	GG↓CGCC			423
	<i>NunII</i>	GG↓CGCC		G	139
	<i>SfoI</i>	GGCGCC			153
<i>NcoI</i>		C↓CATGG		ABGIMNPR	139
	<i>NspSAIII</i>	CCATGG			85
<i>NdeI</i>		CA↓TATG		BGNP	424
<i>NheI</i>		G↓CTAGC		BGMNPR	376
<i>NlaIII</i>		CATG↓		N	314
	<i>HinI</i>	CATG↓			425
	<i>Hin8II</i>	CATG			15
<i>NlaIV</i>		GGN↓NCC		N	314
	<i>BcrI</i>	GGNNCC			228
	<i>Bsp29I</i>	GGNNCC			33
	<i>BssI</i>	GGNNCC			71
	<i>Rlu3I</i>	GGNNCC			48
<i>NotI</i>		GC↓GGCCGC		AGIMNPRU	426,427
<i>NruI</i>		TCG↓CGA		ABGIMNPU	376
	<i>AmaI</i>	TCGCGA			128
	<i>Bsp68I</i>	TCGCGA			69
	<i>SalDI</i>	TCGCGA			27
	<i>Sbo13I</i>	TCG↓CGA			112
<i>NspI</i>		RCATG↓Y		A	59
	<i>NspHI</i>	RCATG↓Y		G	76
<i>NspBII</i>		CMG↓CKG		G	76
<i>PflMI</i>		CCANNNN↓NTGG		N	153
<i>PleI</i>		GAGTC(4/5)		N	428
<i>PmaCI</i>		CAC↓GTG			429
	<i>Bsp87I</i>	CACGTG			69
	<i>Eco72I</i>	CAC↓GTG			430
	<i>PmlI</i>	CACGTG		N	431
<i>PpuMI</i>		RG↓GWCCY		N	153,432
	<i>UbaII</i>	RG↓GWCCY			18
<i>PstI</i>		CTGCA↓G	5(6)	ABGIMNPRU	374,401,433
	<i>AinI</i>	CTGCAG			68

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Enzyme ¹	Isoschizomers Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
<i>Ali2882I</i>	CTGCAG			122
<i>AliAJI</i>	CTGCA↓G			434
<i>Asp36I</i>	CTGCAG			157
<i>Asp708I</i>	CTGCAG			88
<i>AspTI</i>	CTGCAG			68
<i>BblI</i>	CTGCAG			11
<i>Bce170I</i>	CTGCAG			123
<i>Bsp17I</i>	CTGCAG			33
<i>Bsp43I</i>	CTGCAG			48
<i>Bsp63I</i>	CTGCA↓G			301
<i>Bsp78I</i>	CTGCAG			301
<i>Bsp81I</i>	CTGCAG			69
<i>Bsp93I</i>	CTGCAG			69
<i>Bsp107I</i>	CTGCAG			33
<i>Bsp108I</i>	CTGCAG			33
<i>BspBI</i>	CTGCA↓G			42
<i>BsuBI</i>	CTGCAG			123,435
<i>CauIII</i>	CTGCAG			436
<i>CjII</i>	CTGCA↓G			388
<i>CjfrA4I</i>	CTGCA↓G			437
<i>ClcI</i>	CTGCAG			68
<i>CstI</i>	CTGCA↓G			438
<i>EaePI</i>	CTGCAG			274
<i>Ecl77I</i>	CTGCAG			227
<i>Ecl133I</i>	CTGCAG			51
<i>Ecl593I</i>	CTGCAG			188
<i>Eco48I</i>	CTGCAG			129
<i>Eco49I</i>	CTGCAG			129
<i>Eco83I</i>	CTGCAG			227
<i>Eco161I</i>	CTGCAG			51
<i>Eco167I</i>	CTGCAG			51
<i>Esp5II</i>	CTGCAG			173
<i>Esp141I</i>	CTGCAG			187
<i>GseII</i>	CTGCAG			54
<i>Kpn12I</i>	CTGCAG			51
<i>MauI</i>	CTGCAG			127
<i>MkrI</i>	CTGCAG			25
<i>NasI</i>	CTGCAG			105
<i>NgbI</i>	CTGCAG			25
<i>NocI</i>	CTGCAG			376
<i>PmaI</i>	CTGCAG			132
<i>Pma44I</i>	CTGCAG			439
<i>PmyI</i>	CTGCAG			440
<i>SalPI</i>	CTGCA↓G			441,442
<i>SfiI</i>	CTGCA↓G			253
<i>SkaII</i>	CTGCAG			57
<i>XmaII</i>	CTGCAG			443
<i>XorI</i>	CTGCAG			444
<i>XphI</i>	CTGCAG			445
<i>YenI</i>	CTGCA↓G			446
<i>YenAI</i>	CTGCAG			446
<i>YenBI</i>	CTGCAG			446
<i>YenCI</i>	CTGCAG			446

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>YenDI</i>	CTGCAG			446
	<i>YenEI</i>	CTGCAG			446
<i>PvuI</i>		CGAT↓CG		ABGMNPRU	447
	<i>BmaI</i>	CGATCG			27,448,449
	<i>BmaAI</i>	CGATCG			28
	<i>BmaBI</i>	CGATCG			27
	<i>BmaCI</i>	CGATCG			27
	<i>BmaDI</i>	CGATCG			27
	<i>Cfr5II</i>	CGATCG			33
	<i>DrdIII</i>	CGATCG			223
	<i>EclII</i>	CGATCG			450
	<i>NblI</i>	CGAT↓CG			132
	<i>RshI</i>	CGAT↓CG			451
	<i>RspI</i>	CGATCG			452
	<i>XmiI</i>	CGATCG			453
	<i>XmiAI</i>	CGATCG			453
	<i>XnuI</i>	CGATCG			311
	<i>XorII</i>	CGAT↓CG		B	444,447
<i>PvuII</i>		CAG↓CTG	4(4)	ABGIMNPRU	447,454
	<i>BavI</i>	CAG↓CTG			455
	<i>Cfr6I</i>	CAG↓CTG	4(4)		43,44,454
	<i>GspI</i>	CAGCTG			68
	<i>MziI</i>	CAGCTG			456
	<i>NmeRI</i>	CAGCTG			457
	<i>SbaI</i>	CAGCTG			330,377
	<i>SciAII</i>	CAGCTG			68
<i>RsaI</i>		GT↓AC		ABGIMNPRU	458
	<i>Csp6I</i>	GTAC			129
	<i>CviQI</i>	G↓TAC			459
<i>RsrII</i>		CG↓GWCCG		BGN	460
	<i>CpoI</i>	CGGWCCG			27
	<i>CspI</i>	CGGWCCG			461
<i>SacI</i>		GAGCT↓C		AGIMNPRU	462
	<i>Ecl136II</i>	GAG↓CTC			18
	<i>Ecl137I</i>	GAGCTC			187
	<i>EcoICRI</i>	GAGCTC			127
	<i>NasSI</i>	GAGCTC			105
	<i>ScoI</i>	GAGCTC			415
	<i>SstI</i>	GAGCT↓C		B	463,464
<i>SacII</i>		CCGC↓GG		INPRU	462
	<i>AosIII</i>	CCGCGG			62
	<i>BacI</i>	CCGCGG			66,310
	<i>Bsp12I</i>	CCGCGG			33
	<i>Cfr37I</i>	CCGCGG			46
	<i>Cfr41I</i>	CCGCGG			46
	<i>Cfr42I</i>	CCGC↓GG			14
	<i>Cfr43I</i>	CCGCGG			47
	<i>Cfr45II</i>	CCGCGG			47
	<i>CscI</i>	CCGC↓GG			465
	<i>DrdAI</i>	CCGCGG			223
	<i>DrdBI</i>	CCGCGG			223
	<i>DrdCI</i>	CCGCGG			223
	<i>DrdEI</i>	CCGCGG			466

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>DrdFI</i>	CCGCGG			223
	<i>DrdGI</i>	CCGCGG			467
	<i>DspII</i>	CCGCGG			48
	<i>EccI</i>	CCGCGG			66,468
	<i>Ecl28I</i>	CCGCGG			157
	<i>Ecl37I</i>	CCGCGG			52
	<i>Eco55I</i>	CCGCGG			129
	<i>Eco92I</i>	CCGCGG			227
	<i>Eco96I</i>	CCGCGG			227
	<i>Eco99I</i>	CCGCGG			227
	<i>Eco100I</i>	CCGCGG			187
	<i>Eco104I</i>	CCGCGG			251
	<i>Eco134I</i>	CCGCGG			51
	<i>Eco135I</i>	CCGCGG			51
	<i>Eco158I</i>	CCGCGG			187
	<i>Eco182I</i>	CCGCGG			51
	<i>Eco196I</i>	CCGCGG			51
	<i>Eco208I</i>	CCGCGG			33
	<i>GalI</i>	CCGC↓GG			388
	<i>GceGLI</i>	CCGC↓GG			469
	<i>GceI</i>	CCGC↓GG			388
	<i>KspI</i>	CCGC↓GG			470
	<i>MraI</i>	CCGCGG		G	471
	<i>NgoIII</i>	CCGCGG			472
	<i>NgoDI</i>	CCGCGG			216
	<i>NgoPIII</i>	CCGC↓GG			266
	<i>NlaDIII</i>	CCGCGG			56
	<i>NlaSI</i>	CCGCGG			16
	<i>PaeAI</i>	CCGC↓GG			437,473
	<i>SaaI</i>	CCGCGG			153
	<i>SabI</i>	CCGCGG			415
	<i>SakI</i>	CCGCGG			50
	<i>SboI</i>	CCGCGG			474,475
	<i>SfrI</i>	CCGCGG			474,475
	<i>ShyI</i>	CCGCGG			476
	<i>SseII</i>	CCGCGG			54
	<i>SsiII</i>	CCGC↓GG		B	463
	<i>TglI</i>	CCGCGG			131
<i>SalI</i>		G↓TCGAC		ABGIMNPRU	477
	<i>HgiCIII</i>	G↓TCGAC			12
	<i>HgiDII</i>	G↓TCGAC			12
	<i>Koyl</i>	GTCGAC			478
	<i>NopI</i>	G↓TCGAC			132
	<i>RheI</i>	GTCGAC			128
	<i>RhpI</i>	GTCGAC			128
	<i>RrhI</i>	GTCGAC			65
	<i>RroI</i>	GTCGAC			65
	<i>XamI</i>	GTCGAC			477
	<i>XciI</i>	G↓TCGAC			479
<i>SauI</i>		CC↓TNAGG		M	480
	<i>AocI</i>	CC↓TNAGG			62
	<i>AxyI</i>	CC↓TNAGG		G	481
	<i>Bsu36I</i>	CC↓TNAGG		N	482

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>CviI</i>	CC↓TNAGG		B	483,484
	<i>EciCI</i>	CCTNAGG			34
	<i>Eco76I</i>	CCTNAGG			227
	<i>Eco81I</i>	CC↓TNAGG		AU	485
	<i>Eco115I</i>	CCTNAGG			187
	<i>Eco118I</i>	CCTNAGG			187
	<i>MstII</i>	CC↓TNAGG			132
	<i>OxaNI</i>	CC↓TNAGG			133
	<i>SecIII</i>	CCTNAGG			366
<i>ScaI</i>		AGT↓ACT		ABGIMNPRU	486,487
	<i>Asp763I</i>	AGTACT			188
	<i>BsrMI</i>	AGTACT			70
<i>ScrFI</i>		CC↓NGG		GMN	488
	<i>Bsp53I</i>	CCNGG			69
	<i>Bsp73I</i>	CCNGG			69
	<i>Eco43I</i>	CCNGG			489
	<i>Eco51II</i>	CCNGG			129
	<i>Eco80I</i>	CCNGG			227
	<i>Eco85I</i>	CCNGG			489
	<i>Eco93I</i>	CCNGG			227
	<i>Eco153I</i>	CCNGG			187
	<i>Eco200I</i>	CCNGG			51
	<i>Msp67I</i>	CC↓NGG			41
	<i>SsoII</i>	↓CCNGG	2(5)		238,490
<i>SduI</i>		GDGCH↓C			491,492
	<i>AocII</i>	GDGCH↓C			62
	<i>Bsp1286I</i>	GDGCH↓C		GNU	66,123,493
	<i>NspII</i>	GDGCH↓C		P	59
<i>SecI</i>		C↓CNNGG			366
	<i>BsaII</i>	CCNNGG			494
<i>SfaNI</i>		GCATC(5/9)		N	137
<i>SfeI</i>		C↓TRYAG			495
<i>SfiI</i>		GGCCNNNN↓NGGCC		GINPRU	496
<i>SmaI</i>		CCC↓GGG	3(5)	ABGIMNPRU	443,497,498
	<i>AhyI</i>	C↓CCGGG			431
	<i>Cfr9I</i>	C↓CCGGG	2(4)		43,44,497
	<i>CfrJ4I</i>	CCC↓GGG			499
	<i>EciRI</i>	CCC↓GGG			500
	<i>XcyI</i>	C↓CCGGG			501
	<i>XmaI</i>	C↓CCGGG		INR	443
<i>SnaBI</i>		TAC↓GTA		GMN	502
	<i>EciAI</i>	TACGTA			34
	<i>Eco105I</i>	TAC↓GTA			18
	<i>Eco158II</i>	TACGTA			187
<i>SnaI</i>		GTATAC			503
	<i>XcaI</i>	GTA↓TAC			504
<i>SpeI</i>		A↓CTAGT		BMNR	376
<i>SphI</i>		GCATG↓C		ABGIMNPRU	505
	<i>BbuI</i>	GCATG↓C			506
	<i>Bsp121I</i>	GCATGC			33
	<i>PaeI</i>	GCATG↓C			507
	<i>SpaXI</i>	GCATGC			127
<i>SpII</i>		C↓GTACG		A	318

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Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>PfuI</i>	CGTACG			27
<i>SspI</i>		AAT↓ATT		BMNR	487
<i>StuI</i>		AGG↓CCT		ABGIMNPR	508
	<i>AatI</i>	AGG↓CCT		U	5
	<i>Asp78I</i>	AGGCCT			188
	<i>ChyI</i>	AGGCCT			28
	<i>Eco147I</i>	AGG↓CCT			33,509
	<i>GdiI</i>	AGG↓CCT			290
	<i>NtaSI</i>	AGGCCT			105
<i>StyI</i>		C↓CWWGG		BGMNR	510
	<i>Eco130I</i>	C↓CWWGG			33,511
	<i>Eco208II</i>	CCWWGG			33
	<i>EcoT14I</i>	C↓CWWGG		A	512
	<i>EcoT104I</i>	CCWWGG			512
	<i>SblAI</i>	CCWWGG			330
	<i>SblBI</i>	CCWWGG			330
	<i>SblCI</i>	CCWWGG			330
<i>TaqI</i>		T↓CGA	4(6)	BGIMNPRU	513,514
	<i>CviBIII</i>	TCGA	4(6)		387
	<i>TfiI</i>	TCGA			513
	<i>TthHB8I</i>	T↓CGA	4(6)	A	513,515–517
<i>TaqII7</i>		GACCGA(11/9) CACCCA(11/9)			66,518
<i>Tsp45I</i>		GTSAC			519
<i>TspEI</i>		AATT			520
<i>Tth111I</i>		GACN↓NNGTC		AGINP	521
	<i>AspI</i>	GACN↓NNGTC			470
	<i>FsuI</i>	GACNNNGTC			415
	<i>NtaI</i>	GACNNNGTC			105
	<i>SpII</i>	GACNNNGTC			318
	<i>TspI</i>	GACNNNGTC			71
	<i>TteI</i>	GACNNNGTC			521
	<i>TtrI</i>	GACNNNGTC			521
<i>Tth111II</i>		CAARCA(11/9)			522
<i>VspI</i>		AT↓TAAT			523
	<i>AseI</i>	AT↓TAAT		N	180
	<i>AsnI</i>	AT↓TAAT			524
<i>XbaI</i>		T↓CTAGA		ABGIMNPRU	525
<i>XcmI</i>		CCANNNNNNNTGG		27	
<i>XhoI</i>		C↓TCGAG		ABGIMNPRU	526
	<i>AbrI</i>	C↓TCGAG			527
	<i>Asp47I</i>	CTCGAG			188
	<i>Asp703I</i>	CTCGAG			88
	<i>BadI</i>	CTCGAG			163
	<i>BbfI</i>	CTCGAG			163
	<i>BbiIII</i>	CTCGAG			11
	<i>BluI</i>	C↓TCGAG			526
	<i>Bsp92I</i>	CTCGAG			69
	<i>BssHI</i>	CTCGAG			139
	<i>BstHI</i>	CTCGAG			139
	<i>BstLI</i>	CTCGAG			70
	<i>BstVI</i>	CTCGAG	5(6)		528,529
	<i>BsuMI</i>	CTCGAG	3(5)		123,279

Enzyme ¹	Isoschizomers	Recognition ² Sequence	Me ³ site	Commercial ⁴ source	Reference
	<i>BthI</i>	CTCGAG			154
	<i>CcrI</i>	C↓TCGAG			530
	<i>DdeII</i>	CTCGAG			66
	<i>DrdDI</i>	CTCGAG			466
	<i>McaI</i>	CTCGAG			88
	<i>MecI</i>	CTCGAG			456
	<i>MpuI</i>	CTCGAG			456
	<i>MsiI</i>	CTCGAG			66,349
	<i>Paer7I</i>	C↓TCGAG	5(6)	N	531,532
	<i>PanI</i>	C↓TCGAG			127
	<i>PfII</i>	CTCGAG			28
	<i>PfIWI</i>	CTCGAG			533
	<i>Sau3239I</i>	C↓TCGAG			534,535
	<i>SciI</i>	CTC↓GAG			41
	<i>ScuI</i>	CTCGAG			474
	<i>SexI</i>	CTCGAG			474
	<i>SgaI</i>	CTCGAG			474
	<i>SgoI</i>	CTCGAG			474
	<i>SlaI</i>	C↓TCGAG			536
	<i>SluI</i>	CTCGAG			475
	<i>SpaI</i>	CTCGAG			474
	<i>Ssp4I</i>	CTCGAG			48
	<i>XpaI</i>	C↓TCGAG			526
<i>XhoII</i>		R↓GATCY		GM	131,282,537
	<i>AitAI</i>	RGATCY			27
	<i>AitII</i>	RGATCY			228
	<i>BsrYI</i>	R↓GATCY		N	538
	<i>MflI</i>	R↓GATCY		A	539
<i>XmaIII</i>		C↓GGCCG	4(5)	B	32,540
	<i>Aaai</i>	C↓GGCCG			541
	<i>Aaai</i>	C↓GGCCG			541
	<i>BstZI</i>	CGGCCG			70
	<i>EagI</i>	C↓GGCCG		N	542
	<i>EclXI</i>	C↓GGCCG			543
	<i>Eco52I</i>	C↓GGCCG		AU	44,100
<i>XmnI</i>		GAANN↓NNTTC		GN	65,544
	<i>Asp700I</i>	GAANN↓NNTTC		M	88

Type III enzymes

Enzyme	Isoschizomers	Recognition Sequence	Me ³ site	Reference
<i>EcoP15I</i>		CAGCAG		565,566
<i>EcoPI</i>		AGACC	3(6)	567–571
<i>HinfIII</i>		CGAAT		572,573
	<i>HineI</i>	CGAAT		574

FOOTNOTES

1. * signifies that *DpnI* and its isoschizomers require the presence of 6-methyladenosine within the recognition sequence GATC.

2. Recognition sequences are given using the standard abbreviations (575) to represent ambiguity:

R = G or A
Y = C or T
M = A or C
K = G or T
S = G or C
W = A or T
H = A or C or T
B = G or T or C
V = G or C or A
D = G or A or T
N = A or C or G or T

3. The site of methylation by the cognate methylase when known is indicated as follows. The first number shows the base within the recognition sequence that is modified. A negative number indicates the complementary strand, numbered from the 5' base of that strand. The number in parentheses indicates the specific methylation involved. (6) = N6-methyladenosine (5) = 5-methylcytosine (4) = N4-methylcytosine.

4. Commercial sources of restriction enzymes are abbreviated as follows:

A Amersham (8/88)
B Bethesda Research Laboratories (1/89)
G Anglian Biotechnology Ltd. (9/88)
I International Biotechnologies Inc 9/88)
M Boehringer-Mannheim (1/89)
N New England Biolabs (2/89)
P Pharmacia P-L Biochemicals (2/89)
R Promega Biotec (10/88)
U United States Biochemical Corporation (2/89)

5. *EcoRII* isoschizomers fall into two classes based upon their sensitivity to methylation. *EcoRII* will not cleave when the second cytosine in the recognition sequence is methylated to 5-methylcytosine whereas *MvaI* will cleave such a sequence. Isoschizomers of *EcoRII* that are like *MvaI* are indicated by +.

6. *MboI* isoschizomers fall into two classes based upon their sensitivity to methylation. *MboI* will not cleave when the recognition sequence contains 6-methyladenosine whereas *Sau3AI* will not cleave when its recognition sequence contains 5-methylcytosine. Isoschizomers of *MboI* that are like *Sau3AI* are indicated by +.

7. *TaqII* differs from other restriction enzymes in recognizing two distinct sequences: GACCGA(11/9) and CACCCA(11/9).

Alphabetical listing of Type II restriction enzymes

AaI (XmaIII)	AaCI (BamHI)	AaI (BamHI)	AaMI
AaII (StuI)	AaII	AbrI (XhoI)	AaI (AsuII)
AaII (BamHI)	AaIII (MstI)	AaIV (HaeIII)	AccEBI (BamHI)
AccI	AccII (FnuDII)	AccIII (BspMII)	AcrI (AvaI)
AcrII (BstEII)	AcyI	AcyII	Aeul (EcoRII)
AflI (AvaII)	AflII	AflIII	AhaI (CauII)
AhaII (AcyI)	AhaIII	AhyI (SmaI)	AimI
AinI (PstI)	AinII (BamHI)	AitAI (XhoII)	AitI (Eco47III)
AitII (XhoII)	Ali12257I (BamHI)	Ali12258I (BamHI)	Ali2882I (PstI)
AliAJI (PstI)	AliI (BamHI)	AluI	AlwI (BinI)
AlwNI	AlwXI (BbvI)	Amal (NruI)	Amel (ApaLI)
AmelI (NaeI)	Anil	AniMI (NaeI)	AocI (Saul)
AocII (SduI)	AorI (EcoRII)	AosI (MstI)	AosII (AcyI)
AosIII (SacII)	Apal	ApaLI	ApeAI (NaeI)
ApeI (MluI)	AprI (NaeI)	ApuI (AsuI)	ApyI (EcoRII)

AquI (AvaI)	AseI (VspI)	AseII (CauII)	AsnI (VspI)
Asp1I (CauII)	Asp36I (PstI)	Asp47I (XhoI)	Asp52I (HindIII)
Asp697I (AvaII)	Asp700I (XmnI)	Asp703I (XhoI)	Asp707I (ClaI)
Asp708I (PstI)	Asp718I (KpnI)	Asp742I (HaeIII)	Asp748I (HpaII)
Asp763I (ScaI)	Asp78I (StuI)	AspAI (BstEII)	AspBI (AvaI)
AspBII (AvaI)	AspCI (AvaI)	AspCII (AvaII)	AspDI (AvaI)
AspDII (AvaII)	AspHI (HgiAI)	AspI (Tth111I)	AspTI (PstI)
AspTII (BamHI)	AspTIII (HaeIII)	AstWI (AcyI)	AsuI
AsuII	AsuIII (AcyI)	AtuII (EcoRII)	AtuAI
AtuBI (EcoRII)	AtuBVI	AtuCI (BclI)	AtuLAMI
AtuII (EcoRII)	AvaI	AvaII	AvaIII
AviI (AsuII)	AviII (MstI)	AvrI (AvaI)	AvrII
AxyI (SauI)	Bac36I (AsuI)	BacI (SacII)	BadI (XhoI)
Ball	BamFI (BamHI)	BamHI	BamKI (BamHI)
BamNI (BamHI)	BamNxiI (AvaII)	BanI (HgiCI)	BanII (HgiII)
BanIII (ClaI)	BavI (PvuII)	BbeAI (NarI)	BbeAII
BbeI (NarI)	BbeII	BbeSI	Bbf7411I (BspMII)
BbfI (XhoI)	BbiI (PstI)	BbiII (AcyI)	BbiIII (XhoI)
BbiIV	Bbri (HindIII)	Bbvi	BbvII
Bcal (HhaI)	Bce1229I	Bce14579I	Bce170I (PstI)
Bce243I (MboI)	Bce71I (HaeIII)	BceFI (FnuDII)	BceRI (FnuDII)
BceII	BclI	Bcml (ClaI)	Bcni (CauII)
Bco33I (HaeIII)	Bco35I (GsuI)	BcrI (NlaIV)	BdiI (ClaI)
Bepl (FnuDII)	BglI	BglII	BinI
BinSI (EcoRII)	BinSII (NarI)	Bla7920I (BspMII)	Blil (HaeIII)
Blol	BluI (XhoI)	BluII (HaeIII)	BmaKI (PvuI)
BmaBI (PvuI)	BmaCI (PvuI)	BmaDI (PvuI)	BmaI (PvuI)
Bme142I (HaeII)	Bme205I	Bme216I (AvaII)	Bme899I
BmeI	BpeI (HindIII)	Bpri	Bpul
BsaAI	BsaBI	Bsal (Eco31I)	BsaI (SceI)
BsaPI (MboI)	Bscl (ClaI)	Bsel (HaeIII)	BseII (HpaI)
BsePI	BshAI (HaeIII)	BshBI (HaeIII)	BshCI (HaeIII)
BshDI (HaeIII)	BshEI (HaeIII)	BshFI (HaeIII)	BshI (HaeIII)
BsmAI	BsmI	BsoPI (BsePI)	Bsp100I (AvaII)
Bsp103I (EcoRII)	Bsp105I (MboI)	Bsp106I (ClaI)	Bsp107I (PstI)
Bsp108I (PstI)	Bsp116I (HpaII)	Bsp117I (HgiII)	Bsp119I (AsuII)
Bsp120I (ApaI)	Bsp121I (SphI)	Bsp122I (MboI)	Bsp1286I (SduI)
Bsp12I (SacII)	Bsp12II	Bsp16I (EcoRV)	Bsp17I (PstI)
Bsp18I (MboI)	Bsp211I (HaeIII)	Bsp21I (Cfr10I)	Bsp226I (HaeIII)
Bsp22I (GsuI)	Bsp28I (GsuI)	Bsp29I (NlaIV)	Bsp2I (ClaI)
Bsp30I (BamHI)	Bsp43I (PstI)	Bsp46I (BamHI)	Bsp47I (HpaII)
Bsp48I (HpaII)	Bsp49I (MboI)	Bsp4I (ClaI)	Bsp50I (FnuDII)
Bsp51I (MboI)	Bsp52I (MboI)	Bsp53I (ScrFI)	Bsp54I (MboI)
Bsp55I (CauII)	Bsp56I (EcoRII)	Bsp57I (MboI)	Bsp58I (MboI)
Bsp59I (MboI)	Bsp5I (HpaII)	Bsp60I (MboI)	Bsp61I (MboI)
Bsp63I (PstI)	Bsp64I (MboI)	Bsp65I (MboI)	Bsp66I (MboI)
Bsp67I (MboI)	Bsp68I (NruI)	Bsp6I (Fnu4HI)	Bsp6II (Eco57I)
Bsp70I (FnuDII)	Bsp71I (HaeIII)	Bsp72I (MboI)	Bsp73I (ScrFI)
Bsp74I (MboI)	Bsp76I (MboI)	Bsp78I (PstI)	Bsp7I (CauII)
Bsp81I (PstI)	Bsp82I (AsuII)	Bsp84I (ClaI)	Bsp87I (PmaCI)
Bsp8I (CauII)	Bsp91I (MboI)	Bsp92I (XhoI)	Bsp93I (PstI)
Bsp98I (BamHI)	Bsp9I (MboI)	BspAI (MboI)	BspBI (PstI)
BspBII (AsuI)	BspHI	BspMI	BspMII
BspRI (HaeIII)	BspXI (ClaI)	BspXII (BclI)	BsrHI (BsePI)
BsrI	BsrPI	BsrPII (MboI)	BssCI (HaeIII)
BssGI (BstXI)	BssGII (MboI)	BssHI (XhoI)	BssHII (BsePI)
BssI (NlaIV)	BssPI	Bst31I (BstEII)	BstAI
BstBI (AsuII)	BstCI (HaeIII)	BstDI (BstEII)	BstEI

BstEII	BstEIII (Mbol)	BstFI (HindIII)	BstGI (BclI)
BstGII (EcoRII)	BstHI (XhoI)	BstI (BamHI)	BstJI (HaeIII)
BstKI (BclI)	BstLI (XhoI)	BstMI (ScaI)	BstNI (EcoRII)
BstOI (EcoRII)	BstPI (BstEII)	BstQI (BamHI)	BstRI (EcoRV)
BstSI (AvaI)	BstTI (BstXI)	BstUI (FnuDII)	BstVI (XhoI)
BstWI (EcoNI)	BstXI	BstXII (Mbol)	BstYI (XhoII)
BstZI (XmaIII)	Bsu1076I (HaeIII)	Bsu1114I (HaeIII)	Bsu1145I
Bsu1192I (HpaII)	Bsu1192II (FnuDII)	Bsu1193I (FnuDII)	Bsu1259I
Bsu1532I (FnuDII)	Bsu1854I (HgiII)	Bsu36I (SauI)	Bsu6633I (FnuDII)
BsuBI (PstI)	BsuEII (FnuDII)	BsuFI (HpaII)	BsuMI (XhoI)
BsuRI (HaeIII)	BthI (XhoI)	BthII (BinI)	BtiI (AvaII)
BvuI (HgiII)	CalI	CauB3I (BspMII)	CauI (AvaII)
CauII	CauIII (PstI)	CcrI (XhoI)	Cdi27I (EcoRII)
Cell (BamHI)	CellI (EspI)	CeqI (EcoRV)	CflI (PstI)
Cfol (HhaI)	Cfr10I	Cfr11I (EcoRII)	Cfr13I (AsuI)
Cfr14I (CfrI)	Cfr19I (BstEII)	Cfr20I (EcoRII)	Cfr22I (EcoRII)
Cfr23I (AsuI)	Cfr24I (EcoRII)	Cfr25I (EcoRII)	Cfr27I (EcoRII)
Cfr28I (EcoRII)	Cfr29I (EcoRII)	Cfr30I (EcoRII)	Cfr31I (EcoRII)
Cfr32I (HindIII)	Cfr33I (AsuI)	Cfr35I (EcoRII)	Cfr37I (SacII)
Cfr38I (CfrI)	Cfr39I (CfrI)	Cfr40I (CfrI)	Cfr41I (SacII)
Cfr42I (SacII)	Cfr43I (SacII)	Cfr45I (AsuI)	Cfr45II (SacII)
Cfr46I (AsuI)	Cfr47I (AsuI)	Cfr48I (HgiII)	Cfr4I (AsuI)
Cfr51I (PvuI)	Cfr52I (AsuI)	Cfr54I (AsuI)	Cfr5I (EcoRII)
Cfr6I (PvuII)	Cfr7I (BstEII)	Cfr8I (AsuI)	Cfr9I (SmaI)
CfrA4I (PstI)	CfrI	CfrNI (AsuI)	CfrS37I (EcoRII)
CfuI (DpnI)	ChI	ChuI (HindIII)	ChuII (HindII)
ChyI (StuI)	Clal	CleI (PstI)	CleII (MstI)
Clil (AvaII)	ClilI (MstI)	ClilII	ClmI (HaeIII)
ClmII (AvaII)	ClitI (HaeIII)	CluI	CpaAI (FnuDII)
Cpal (Mbol)	Cpel (BclI)	Cpfl (Mbol)	Cpol (RsrII)
CscI (SacII)	Csp2I (HaeIII)	Csp45I (AsuII)	Csp4I (ClaI)
Csp5I (Mbol)	Csp6I (RsaI)	CspI (RsrII)	CstI (PstI)
CsuI	CthI (BclI)	CthII (EcoRII)	CtyI (Mbol)
CveI	CviAI (Mbol)	CviBI (HinfI)	CviCI (HinfI)
CviDI (HinfI)	CviEI (HinfI)	CviFI (HinfI)	CviGI (HinfI)
CviHI (Mbol)	CviI	CviJI	CviKI (CviII)
CviLI (CviII)	CviMI (CviII)	CviNI (CviII)	CviOI (CviII)
CviPI	CviQI (RsaI)	CviQII	Cvnl (Saul)
DdeI	DdeII (XhoI)	DdsI (BamHI)	Dmol
DpnI	DpnII (Mbol)	DraI (AhaIII)	DraII
DraIII	DrdAI (SacII)	DrdBI (SacII)	DrdCI (SacII)
DrdDI (XhoI)	DrdEI (SacII)	DrdFI (SacII)	DrdGI (SacII)
DrdI	DrdII	DrdIII (PvuI)	Dsal
DsaII (HaeIII)	Dsp1I (SacII)	EaeI (CfrI)	EaePI (PstI)
EagI (XmaIII)	EagKI (EcoRII)	EagMI (AvaII)	EarI (Ksp632I)
Ecal (BstEII)	EcalI (EcoRII)	EccI (SacII)	EciAI (SnaBI)
EciBI (CfrI)	EciCI (Saul)	EciDI (CauII)	EciEI (ApaI)
EciI	Ecl133I (PstI)	Ecl136I (EcoRII)	Ecl136II (SacI)
Ecl137I (SacI)	Ecl137II (EcoRII)	Ecl28I (SacII)	Ecl37I (SacII)
Ecl593I (PstI)	Ecl66I (EcoRII)	Ecl77I (PstI)	EclI
EclII (EcoRII)	EclJI (PvuI)	EclS39I (EcoRII)	EclXI (XmaIII)
Eco100I (SacII)	Eco101I (Eco31I)	Eco104I (SacII)	Eco105I (SnaBI)
Eco113I (HgiII)	Eco115I (Saul)	Eco118I (Saul)	Eco120I (Eco31I)
Eco121I (CauII)	Eco125I (Eco57I)	Eco127I (Eco31I)	Eco128I (EcoRII)
Eco129I (Eco31I)	Eco130I (StyI)	Eco134I (SacII)	Eco135I (SacII)
Eco143I (BsePI)	Eco147I (StuI)	Eco149I (KpnI)	Eco153I (ScrFI)
Eco155I (Eco31I)	Eco156I (Eco31I)	Eco157I (Eco31I)	Eco158I (SacII)
Eco158II (SnaBI)	Eco159I (EcoRI)	Eco161I (PstI)	Eco162I (Eco31I)

Eco164I (CfrI)	Eco167I (PstI)	Eco168I (HgiCI)	Eco169I (HgiCI)
Eco170I (EcoRII)	Eco171I (HgiCI)	Eco173I (HgiCI)	Eco178I (EcoRV)
Eco179I (CauII)	Eco180I (HgiJII)	Eco182I (SacII)	Eco185I (Eco31I)
Eco188I (HindIII)	Eco190I (CauII)	Eco191I (Eco31I)	Eco193I (EcoRII)
Eco195I (HgiCI)	Eco196I (SacII)	Eco196II (AsuI)	Eco200I (ScrFI)
Eco201I (AsuI)	Eco203I (Eco31I)	Eco204I (Eco31I)	Eco205I (Eco31I)
Eco206I (EcoRII)	Eco207I (EcoRII)	Eco208I (SacII)	Eco208II (StyI)
Eco211I (HgiJII)	Eco215I (HgiJII)	Eco216I (HgiJII)	Eco217I (Eco31I)
Eco225I (Eco31I)	Eco228I (EcoRI)	Eco231I (HindIII)	Eco232I (HgiJII)
Eco233I (Eco31I)	Eco237I (EcoRI)	Eco239I (Eco31I)	Eco240I (Eco31I)
Eco241I (Eco31I)	Eco246I (Eco31I)	Eco247I (Eco31I)	Eco24I (HgiJII)
Eco252I (EcoRI)	Eco25I (HgiJII)	Eco26I (HgiJII)	Eco31I
Eco32I (EcoRV)	Eco35I (HgiJII)	Eco38I (EcoRII)	Eco39I (AsuI)
Eco40I (EcoRII)	Eco41I (EcoRII)	Eco42I (Eco31I)	Eco43I (ScrFI)
Eco47I (AvaII)	Eco47II (AsuI)	Eco47III	Eco48I (PstI)
Eco49I (PstI)	Eco50I (HgiCI)	Eco51I (Eco31I)	Eco51II (ScrFI)
Eco52I (XmaIII)	Eco55I (SacII)	Eco56I (NaeI)	Eco57I
Eco60I (EcoRII)	Eco61I (EcoRII)	Eco64I (HgiCI)	Eco65I (HindIII)
Eco67I (EcoRII)	Eco68I (HgiJII)	Eco70I (EcoRII)	Eco71I (EcoRII)
Eco72I (PmaCI)	Eco76I (SauI)	Eco78I (NarI)	Eco80I (ScrFI)
Eco81I (SauI)	Eco82I (EcoRI)	Eco83I (PstI)	Eco85I (ScrFI)
Eco88I (AvaI)	Eco90I (CfrI)	Eco91I (BstEII)	Eco92I (SacII)
Eco93I (ScrFI)	Eco95I (Eco31I)	Eco96I (SacII)	Eco97I (Eco31I)
Eco98I (HindIII)	Eco99I (SacII)	EcoCKI	EcoHI (CfrI)
EcoICRI (SacI)	EcoNI	EcoO109I (DraII)	EcoO34I
EcoO44I	EcoO65I (BstEII)	EcoRI	EcoRII
EcoRV	EcoT104I (StyI)	EcoT14I (StyI)	EcoT22I (AvaIII)
EcoT38I (HgiJII)	EcoT88I (HgiJII)	EcoT93I (HgiJII)	EcoT95I (HgiJII)
EcoVIII (HindIII)	EheI (NarI)	ErpI (AvaII)	Esp10I (HgiCI)
Esp11I (HgiCI)	Esp12I (HgiCI)	Esp13I (HgiCI)	Esp141I (PstI)
Esp14I (HgiCI)	Esp15I (HgiCI)	Esp19I (KpnI)	Esp1I (HgiCI)
Esp22I (HgiCI)	Esp2I (EcoRII)	Esp3I	Esp4I (AflII)
Esp5I (NaeI)	Esp5II (PstI)	Esp6I (HgiCI)	Esp7I (BsePI)
Esp8I (BsePI)	Esp9I (HgiCI)	EspI	EspII
FbaI (BclI)	FbrI (Fnu4HI)	FdiI (AvaII)	FdiII (MstI)
FinI	FinII (HpaII)	FinSI (HaeIII)	Fnu48I
Fnu4HI	FnuAI (HinfI)	FnuAII (MboI)	FnuCI (MboI)
FnuDI (HaeIII)	FnuDII	FnuDIII (HhaI)	FnuEI (MboI)
FokI	FsaI	Fsfl (Eco57I)	Fsp1604I (EcoRII)
FspI (MstI)	FspII (AsuII)	FspMI (FnuDII)	FspMSI (AvaII)
FsuI (Tth111I)	Gall (SacII)	GceGLI (SacII)	GceI (SacII)
GdlI (StuI)	GdlII	Gdol (BamHI)	GglI
GinI (BamHI)	GoxI (BamHI)	GseI (AsuI)	GseII (PstI)
GseIII (BamHI)	GspAI (AvaII)	GspAII (MstI)	GspAIII
Gspl (PvuII)	GsuI	HacI (MboI)	HaeI
HaeII	HaeIII	HagI	HapI
HapII (HpaII)	HcuI	HgaI	HgiAI
HgiBI (AvaII)	HgiCI	HgiCII (AvaII)	HgiCIII (Sall)
HgiDI (AcyI)	HgiDII (Sall)	HgiEI (AvaII)	HgiEII
HgiFI	HgiGI (AcyI)	HgiHI (HgiCI)	HgiHII (AcyI)
HgiHIII (AvaII)	HgiJI (AvaII)	HgiJII	HgiKI
HgiS2II (CauII)	HhaI	HhaII (HinfI)	HhgI (HaeIII)
HhlI	Hin1056I (FnuDII)	Hin1056II	Hin1076III (HindIII)
Hin1160II (HindII)	Hin1161II (HindII)	Hin173I (HindIII)	HinII (AcyI)
Hin1II (NlaIII)	Hin2I (HpaII)	Hin3I (CauII)	Hin5I (HpaII)
Hin5II (AsuI)	Hin5III (HindIII)	Hin6I (HhaI)	Hin7I (HhaI)
Hin8I (AcyI)	Hin8II (NlaIII)	HinGUI (HhaI)	HinGUII (FokI)
HinHI (HaeII)	HinJCI (HindII)	HinJCII (HindIII)	HinPII (HhaI)

HinSII (HhaI)	HinS2I (HhaI)	HinbIII (HindIII)	HincII (HindII)
HindII	HindIII	Hinfl	HinflI (HindIII)
HjaI (EcoRV)	HpaI	HpaII	HphI
HsaI	Hsp2I (AvaII)	Hsui (HindIII)	Kox165I (EcoRII)
KoxI (BstEII)	KoxII (HgiIII)	KoyI (SalI)	Kpn10I (EcoRII)
Kpn12I (PstI)	Kpn13I (EcoRII)	Kpn14I (EcoRII)	Kpn16I (EcoRII)
Kpn2I (BspMII)	Kpn30I (BsePI)	KpnI	KpnK14I (KpnI)
Ksp632I	KspI (SacII)	LpnI	LpnII
LspI (AsuII)	MaeI	MaeII	MaeIII
MauI (PstI)	MboI	MboII	MbvI
McaI (XhoI)	MecI (XhoI)	MeuI (MboI)	MfeI
MfiI (XhoII)	MfoI (AvaII)	MglI	MglII
MisI (NaeI)	MjaI (MaeI)	MjaII (AsuI)	Mkil (HindIII)
MkrI (PstI)	MlaI (AsuII)	MleI (BamHI)	MltI (AluI)
MluI	MlyI	Mmel	MmeII (MboI)
MniI (HaeIII)	MniII (HpaII)	MnII	MnnI (HindII)
MnnII (HaeIII)	MnnIII	MnnIV (HhaI)	MnoI (HpaII)
MnoII (MnnIII)	MnoIII (MboI)	MosI (MboI)	MphI (EcoRII)
MpuI (XhoI)	MraI (SacII)	MroI (BspMII)	MscI (BamI)
MseI	Msil (XhoI)	MsiII	Msp67I (ScrFI)
Msp67II (MboI)	MspAI (AvaII)	MspBI (MboI)	MspI (HpaII)
MstI	MstII (SauI)	MthAI (MboI)	MthI (MboI)
MvaAI (FnuDII)	MvaI (EcoRII)	Mvil	MvIII
MvnI (FnuDII)	MwoI	Mzil (PvuII)	NaeI
NamI (NarI)	NanI (EcoRV)	NanII (DpnI)	NarI
NasBI (BamHI)	NasI (PstI)	NasSI (SacI)	NasWI (NaeI)
NbaI (NaeI)	NblI (PvuI)	NbrI (NaeI)	Ncal (Hinfl)
NciI (CauII)	NcoI	NcuI (MboII)	NdaI (NarI)
NdeI	NdeII (MboI)	NflAI (EcoRV)	NflAII (MboI)
NfiBI (MboI)	Nfil (MboI)	NfilI	NfilII
Ngbi (PstI)	NgobI (HphI)	NgodI (SacII)	NgodII
NgodIII (DpnI)	Ngol (HaeII)	NgolI (HaeIII)	NgolIII (SacII)
NgomI (NaeI)	NgopII (HaeIII)	NgopIII (SacII)	NgosI (HaeIII)
NheI	NlaDI (MboI)	NlaDII (AsuI)	NlaDIII (SacII)
NlaI (HaeIII)	NlaII (MboI)	NlaIII	NlaIV
NlaSI (SacII)	NlaSII (AcyI)	NliI (AvaI)	NliII (AvaII)
NmeCI (MboI)	Nmel	NmeII	NmeIII
NmeIV	Nmil (KpnI)	NmuAI (AvaI)	NmuAII (AvaII)
NmuDI (DpnI)	NmuEI (DpnI)	NmuEII (AsuI)	NmuFI (NaeI)
Nmul (NaeI)	NmuSI (AsuI)	NocI (PstI)	NopI (SalI)
NopII	NotI	NovI	NovII (Hinfl)
NphI (MboI)	NruI	NsiAI (MboI)	NsiCI (EcoRV)
NsiHI (Hinfl)	NsiI (AvaIII)	NspAI (MboI)	NspBI (AsuII)
NspBII	NspDI (AvaI)	NspDII (AvaII)	NspEI (AvaI)
NspEII	NspFI (AsuII)	NspGI (AvaII)	NspHI (NspI)
NspHII (AvaII)	NspHIII (MstI)	NspI	NspII (SduI)
NspIII (AvaI)	NspIV (AsuI)	NspJI (AsuII)	NspKI (AvaII)
NspLI (MstI)	NspLII (AsuI)	NspLIII	NspLIV
NspMACI (BglII)	NspMI (MstI)	NspSAI (AvaI)	NspSAII (BstEII)
NspSAIII (NcoI)	NspSAIV (BamHI)	NspV (AsuII)	NspWI (NaeI)
NsuDI (DpnI)	Nsul (MboI)	NtaI (Tth111I)	NtaSI (StuI)
NtaSII (NaeI)	NunI	NunII (NarI)	OtuI (AluI)
OtuNI (AluI)	OxaI (AluI)	OxaII	OxaNI (SauI)
Pae177I (BamHI)	Pae181I (CauII)	PaeAI (SacII)	PaeI (SphI)
PaeR7I (XhoI)	PaiI (HaeIII)	Pall (HaeIII)	PanI (XhoI)
Pfal (MboI)	PflAI (FnuDII)	PflI	PflMI
PflNI (XhoI)	PflWI (XhoI)	PfuI (SplI)	PgII (NaeI)
PgIII	PleI	Pma44I (PstI)	PmaCI

PmaI (PstI)	PmiI	PmlI (PmaCI)	PmyI (PstI)
PovI (BclI)	PpaI (Eco31I)	PpuI (HaeIII)	PpuMI
PseI (AsuI)	Psp61I (NaeI)	PspI (AsuI)	PssI (DraII)
PssII	PstI	PvuI	PvuII
RheI (SalI)	RhpI (SalI)	RhpII	RhsI (BamHI)
RleI	RluI (MboI)	Rlu3I (NlaIV)	Rlu4I (BamHI)
RluI (NaeI)	RmeI	RrbI	RrhI (SalI)
RrhII	RroI (SalI)	RsaI	RshI (PvuI)
RshII (CauII)	RspI (PvuI)	RspXI (BspHI)	RsrI (EcoRI)
RsrII	SaaI (SacII)	SabI (SacII)	SacAI (NaeI)
SacI	SacII	SacIII	SakI (SacII)
SalAI (MboI)	SalCI (NaeI)	SalDI (NruI)	SalHI (MboI)
Sall	SallI	SalPI (PstI)	SanI
SaoI (NaeI)	Sau10I (KpnI)	Sau12I (Eco31I)	Sau3239I (XhoI)
Sau3AI (MboI)	Sau6782I (MboI)	Sau96I (AsuI)	SauAI (NaeI)
SauBMKI (NaeI)	SauI	SbaI (PvuII)	SblAI (StyI)
SblBI (StyI)	SblCI (StyI)	Sbo13I (NruI)	SboI (SacII)
SbrI	ScaI	SceI (FnuDII)	SciAI (BstEII)
SciAI (PvuII)	Scii (XhoI)	SciNI (HhaI)	ScoI (SacI)
ScrFI	ScuI (XhoI)	SduI	SdyI (AsuI)
SecI	SecII (HpaII)	SecIII (SauI)	SexI (XhoI)
SexII	SfaGUI (HpaII)	SfaI (HaeIII)	SfaNI
SfeI	SfiI	Sfil (PstI)	SfniI (AvaII)
SfoI (NarI)	Sfri (SacII)	Sgal (XhoI)	SgoI (XhoI)
SgrI	SgriI (EcoRII)	ShyI (SacII)	ShyTI
SinAI (AvaII)	SinBI (AvaII)	SinCI (AvaII)	SinDI (AvaII)
SinEI (AvaII)	SinFI (AvaII)	SinGI (AvaII)	SinHI (AvaII)
SinI (AvaII)	SinJI (AvaII)	SinMI (MboI)	SinMII
SisI	SkaI (NaeI)	SkaII (PstI)	SlaI (XhoI)
SluI (XhoI)	SmaI	SnaBI	SnaI
SnoI (ApaLI)	SodI	SodII	SpaI (XhoI)
SpaXI (SphI)	SpeI	SphI	SplI
SplII (Tth111I)	SplIII (HaeIII)	SsaI	Ssci
SseI (BclI)	SseII (SacII)	SsoI (EcoRI)	SsoII (ScrFI)
Ssp1I (AsuII)	Ssp2I (CauII)	Ssp4I (XhoI)	Sspi
SspXI	SstI (SacI)	SstII (SacII)	SstIII (SacIII)
SstIV (BclI)	SthAI (KpnI)	SthBI (KpnI)	SthCI (KpnI)
SthDI (KpnI)	SthEI (KpnI)	SthFI (KpnI)	SthGI (KpnI)
SthHI (KpnI)	SthI (KpnI)	SthJI (KpnI)	SthKI (KpnI)
SthLI (KpnI)	SthMI (KpnI)	SthNI (KpnI)	StmI
StuI	StyI	SuaI (HaeIII)	Sull (HaeIII)
TaqI	TaqII	TaqXI (EcoRII)	TceI (MboII)
TfiI (TaqI)	TglI (SacII)	ThaI (FnuDII)	TmiI
TmuII (CauII)	TruI (AvaII)	TruII (MboI)	TruIII
Tsp45I	TspEI	TspI (Tth111I)	TspZNI (HaeIII)
TteAI (HaeIII)	TteI (Tth111I)	Tth111I	Tth111II
TthHB8I (TaqI)	TtnI (HaeIII)	TtrI (Tth111I)	Uba1I (PpuMI)
Uba21I (HgiAI)	Uba26I (BsmAI)	Uba44I (ApaLI)	Uba6I (MluI)
Uur960I (Fnu4HI)	VanI (BglI)	VhaI (HaeIII)	VneAI (DraII)
VneI (ApaLI)	VniI (HaeIII)	Vspl	XamI (SalI)
XbaI	XcaI (SnaI)	XciI (SalI)	XcmI
XcyI (SmaI)	XhoI	XhoII	XmaI (SmaI)
XmaII (PstI)	XmaIII	XmlAI (PvuI)	XmlI (PvuI)
Xmni	XniI (PvuI)	XorI (PstI)	XorII (PvuI)
XpaI (XhoI)	XphI (PstI)	YenAI (PstI)	YenBI (PstI)
YenCI (PstI)	YenDI (PstI)	YenEI (PstI)	YenI (PstI)
ZanI (EcoRII)			

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