

## Buffers

Cat #	Buffer	Contents ×1
B001	<u>B:</u>	10 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 1 mM DTT.
B002	<u>G:</u>	10 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 50 mM NaCl; 1 mM DTT.
B003	<u>Q:</u>	50 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 100 mM NaCl; 1 mM DTT.
B004	<u>W:</u>	10 mM Tris-HCl (pH 8.5 at 25° C); 10 mM MgCl <sub>2</sub> ; 100 mM NaCl; 1 mM DTT.
B005	<u>Y:</u>	33 mM Tris- acetate (pH 7.9 at 25° C); 10 mM magnesium acetate; 66 mM potassium acetate; 1 mM DTT.
B006	<u>2W:</u>	20 mM Tris-HCl (pH 8.5 at 25° C); 10 mM MgCl <sub>2</sub> ; 200 mM NaCl; 1 mM DTT.
B007	<u>K:</u>	10 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 100 mM KCl; 1 mM DTT.
B008	<u>2K:</u>	10 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 200 mM KCl; 1 mM DTT.
B010	<u>AbsI:</u>	10 mM Tris-HCl (pH 9.0 at 25° C); 10 mM MgCl <sub>2</sub> ; 50 mM KCl; 1 mM DTT.
B011	<u>EcoRI:</u>	100 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 50 mM NaCl; 1 mM DTT.
B012	<u>BisI</u>	10 mM Tris-HCl (pH 9.0 at 25° C); 10 mM MgCl <sub>2</sub> ; 150 mM KCl; 1 mM DTT.
B014	<u>GlaI:</u>	10 mM Tris-HCl (pH 8.5 at 25° C); 5 mM MgCl <sub>2</sub> ; 10 mM NaCl; 1 mM 2- mercaptoethanol.
B015	<u>GluI:</u>	10 mM Tris-HCl (pH 9.0 at 25° C); 7,5 mM MgCl <sub>2</sub> ; 75 mM NaCl; 1 mM 2- mercaptoethanol.
B016	<u>Mall</u>	20 mM Tris-HCl (pH 9.0 at 25° C); 10 mM MgCl <sub>2</sub> ; 150 mM NaCl; 1 mM DTT.
B017	<u>N-Bst9I:</u>	10 mM Tris-HCl (pH 8.5 at 25° C); 10 mM MgCl <sub>2</sub> ; 150 mM KCl; 1 mM DTT.
B018	<u>RigI:</u>	10 mM Tris-HCl (pH 8.5 at 25° C); 5 mM MgCl <sub>2</sub> ; 1 mM DTT
B301	<u>T4-Polynucleotide Kinase:</u>	50 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 5 mM DTT.
B302	<u>T4-DNA Ligase:</u>	50 mM Tris-HCl (pH 7.8 at 25° C); 10 mM MgCl <sub>2</sub> ; 10 mM DTT; 1 mM ATP. Storage conditions: by small portions avoiding repeated defrosting to prevent ATP decomposition.
B303	<u>T4-RNA Ligase:</u>	50 mM Tris-HCl (pH 7.8 at 25° C); 10 mM MgCl <sub>2</sub> ; 10 mM DTT; 1 mM ATP.
B304	<u>DNA polymerase I E.coli (Klenow Fragment):</u>	50 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 5 mM DTT.
B309	<u>Hot Start Taq DNA- polymerase:</u>	67 mM Tris-HCl (pH 8.8 at 25 C), 16.6 mM (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , 0.01 % Tween-20. Supplementary material is 50 mM MgCl <sub>2</sub> .
B310	<u>Pfu DNA- polymerase:</u>	20 mM Tris-HCl (pH 8.8 at 25° C), 10 mM KCl, 10 mM (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , 2 mM MgSO <sub>4</sub> , 0.1% Triton X-100.
B321	<u>AS (Ammonium Sulfate):</u>	67 mM Tris-HCl (pH 8.8 at 25 C), 16.6 mM (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , 0.01 % Tween-20. Supplementary material is 50 mM MgCl <sub>2</sub> .
B305	<u>Taq-DNA- polymerase , TaqSE-DNA- polymerase:</u>	60 mM Tris-HCl (pH 8.5 at 25° C); 1.5 mM MgCl <sub>2</sub> ; 25 mM KCl; 10 mM 2- mercaptoethanol; 0.1% Triton X-100.
B306	<u>Taq-DNA- polymerase (Mg<sup>2+</sup> – free):</u>	60 mM Tris-HCl (pH 8.5 at 25° C); 25 mM KCl; 10 mM 2- mercaptoethanol; 0.1% Triton X-100.
B311	<u>T4- DNA- polymerase:</u>	67 mM Tris-HCl (pH 8.8 at 25° C); 6.7 mM MgCl <sub>2</sub> ; 16.7 mM (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> ; 1 mM DTT.
B319	<u>T7- RNA- polymerase:</u>	50 mM Tris-HCl (pH 7.5 at 25° C); 6 mM MgCl <sub>2</sub> ; 10 mM DTT; 2 mM spermidine.
B312	<u>M-MuLV reverse transcriptase</u>	50 mM Tris-HCl (pH 8.3 at 25° C); 75 mM KCl; 3 mM MgCl <sub>2</sub> , 10 mM DTT.
B313	<u>Inorganic pyrophosphatase</u>	50 mM Tris-HCl (pH 8.5 at 25° C); 1 mM MgCl <sub>2</sub>
B314	<u>BAL-31 nuclease:</u>	20 mM Tris-HCl (pH 8.0 at 25° C); 600 mM NaCl; 12 mM CaCl <sub>2</sub> ; 12 mM MgCl <sub>2</sub> ; 1 mM EDTA.
B315	<u>Mung Bean nuclease</u>	50 mM sodium acetate; 30 mM NaCl; 1 mM ZnSO <sub>4</sub> ; (pH 5.0 at 25° C).
B316	<u>Exonuclease III:</u>	50 mM Tris-HCl (pH 7.6 at 25° C); 1 mM MgCl <sub>2</sub> .
B317	<u>Endonuclease I:</u>	20 mM Glycin -NaOH (pH 9.5 at 25° C); 25 mM MgCl <sub>2</sub> ; 100mM NaCl; 1 mM 2- mercaptoethanol.
B318	<u>Uracil-DNA-glycosylase:</u>	20 mM Tris-HCl (pH 8.0 at 25° C); 1 mM EDTA; 1 mM DTT.
B003	<u>Alkaline phosphatase:</u>	50 mM Tris-HCl (pH 7.6 at 25° C); 10 mM MgCl <sub>2</sub> ; 100 mM NaCl; 1 mM DTT.
B100	<u>A (Storage and dilution buffer) :</u>	10 mM Tris-HCl (pH 7.6 at 25° C); 50 mM KCl; 0,1 mM EDTA; 200 µg/ml BSA; 1 mM DTT; 50% glycerol.
B307	<u>MgCl<sub>2</sub>, 50 mM water solution</u>	50 mM MgCl <sub>2</sub> ; 500 µl
B101	<u>BSA (for Restrictases)</u>	10 mg/ml BSA. ; 500 µl

## SE Buffer Activity Chart for Restriction Enzymes

Enzyme	Recognition sequence	SE Buffer	BSA	Activity (% from maximum)					Optimum t, °C	Inactivation, 20min
				B	G	O	W	Y		
Aat II	GACGT <sup>^</sup> C	Y	-	10-25	25-50	10-25	25-50	100	37	65°C
Abs I	CC <sup>^</sup> TCGAGG	*	-	75-100	10-25	0	50-75	0-10	37	65°C
Acc16 I	TGC <sup>^</sup> GCA	W	-	50-75	75-100	25-50	100	75-100	37	65°C
Acc36 I	ACCTGC(4/8)	Y	-	25-50	25-50	50-75	50-75	100	37	65°C
Acc65 I	G <sup>^</sup> GTACC	W	-	10-25	25-50	75-100	100	10-25	37	65°C
AccB1 I	G <sup>^</sup> GYRCC	K	+	50-75	10-25	10-25	75-100	50-75	37	65°C
AccB7 I	CCANNN <sup>^</sup> NTGG	G	-	10-25	100	25-50	50-75	50-75	37	65°C
AccBS I	GAG <sup>^</sup> CGG	Y	-	75-100	75-100	25-50	25-50	100	37	65°C
Acl I	AA <sup>^</sup> CGTT	Y	+	0-10	0-10	0-10	0-10	100	37	65°C
AclW I	GGATC(4/5)	Y	+	75-100	50-75	0-10	0-10	100	37	65°C
Aco I	Y <sup>^</sup> GGCCR	G	-	50-75	100	50-75	25-50	75-100	37	65°C
Acs I	R <sup>^</sup> AATTY	W	+	25-50	50-75	50-75	100	10-25	50	80°C
Acu I	CTGAAG(16/14)	Y+SAM	+	25-50	50-75	50-75	75-100	100	37	65°C
Afe I	AGC <sup>^</sup> GCT	Y	-	10-25	25-50	75-100	75-100	100	37	65°C
Ags I	TTS <sup>^</sup> AA	Y	+	75-100	50-75	10-25	10-25	100	37	65°C
Ahl I	A <sup>^</sup> CTAGT	B	+	100	75-100	25-50	25-50	75-100	37	No
Ajn I	<sup>^</sup> CCWGG	Y	-	25-50	10-25	10-25	25-50	100	55	65°C
Alu I	AG <sup>^</sup> CT	Y	-	75-100	75-100	10-25	50-75	100	37	65°C
AluB I	AG <sup>^</sup> CT	B	+	100	75-100	10-25	10-25	75-100	37	65°C
Ama87 I	C <sup>^</sup> YCGRG	W	+	10-25	50-75	75-100	100	0-10	37	65°C
Apa I	GGGCC <sup>^</sup> C	Y	+	50-75	25-50	0-10	0-10	100	37	65°C
Ars I	(8/13)GAC(N) <sub>6</sub> TTYG(11/6)	Y	+	0	0	0	0	100	30	65°C
AsiG I	A <sup>^</sup> CCGGT	O	-	10-25	25-50	100	75-100	10-25	37	65°C
AsiS I	GCGAT <sup>^</sup> CGC	B	-	100	75-100	0-10	10-25	25-50	37	80°C
AspA2 I	C <sup>^</sup> CTAGG	W	+	10-25	50-75	75-100	100	75-100	37	80°C
AspLE I	GCG <sup>^</sup> C	O	-	0-25	75-100	100	50-75	25-50	37	80°C
AspS9 I	G <sup>^</sup> GNCC	W	-	50-75	50-75	75-100	100	50-75	37	65°C
AsuC2 I	CC <sup>^</sup> SGG	Y	-	75-100	50-75	10-25	25-50	100	37	65°C
AsuHP I	GGTGA(8/7)	O	-	10-25	50-75	100	75-100	25-50	37	65°C
AsuNH I	G <sup>^</sup> CTAGC	Y	+	75-100	50-75	0-10	0-10	100	37	65°C
BamH I	G <sup>^</sup> GATCC	G	+	25-50	100	75-100	75-100	25-50	37	65°C
Bar I	(7/12)GAAG(N) <sub>6</sub> TAC(12/7)	2K	-	0	0-10	25-50	50-75	10-25	37	65°C
Bbv12 I	GWGCW <sup>^</sup> C	O	-	0-10	10-25	100	75-100	10-25	37	80°C
Bgl I	GCCNNNN <sup>^</sup> NGGC	2W	-	50-75	50-75	0-10	75-100	25-50	37	65°C
Bgl II	A <sup>^</sup> GATCT	O	-	0-10	10-25	100	25-50	10-25	37	80°C
Bis I	G(5mC) <sup>^</sup> NGC	*	-	10-25	25-50	50-75	75-100	50-75	37	65°C
Bls I	G(5mC)N <sup>^</sup> GC	W	-	10-25	10-25	50-75	100	75-100	30	65°C
Bme18 I	G <sup>^</sup> GWCC	O	-	10-25	25-50	100	75-100	10-25	37	65°C
Bmt I	GCTAG <sup>^</sup> C	W	-	10-25	50-75	50-75	100	75-100	37	65°C
Bmul	ACTGGG(5/4)	Y	-	75-100	75-100	25-50	50-75	100	37	65°C
Bpm I	CTGGAG(16/14)	W	+	25-50	50-75	75-100	100	50-75	37	65°C
Bpu10 I	CC <sup>^</sup> TNAGC	K	-	10-25	25-50	50-75	50-75	25-50	37	80°C
Bpu14 I	TT <sup>^</sup> CGAA	G	-	50-75	100	25-50	25-50	75-100	37	65°C
Bsa29 I	AT <sup>^</sup> CGAT	G	+	25-50	100	50-75	50-75	75-100	37	65°C
Bsc4 I	CCNNNN <sup>^</sup> NNGG	W	+	75-100	75-100	50-75	100	25-50	55	80°C
Bse1 I	ACTGG(1/-1)	Y	-	75-100	75-100	25-50	10-25	100	65	80°C
Bse118 I	R <sup>^</sup> CCGGY	O	-	0-10	50-75	100	75-100	25-50	65	80°C
Bse21 I	CC <sup>^</sup> TNAGG	Y	-	50-75	50-75	10-25	25-50	100	37	80°C
Bse3D I	GCAATG(2/0)	G	-	10-25	100	25-50	50-75	75-100	60	80°C
Bse8 I	GATNN <sup>^</sup> NNATC	G	-	25-50	100	75-100	75-100	50-75	60	80°C
BseP I	G <sup>^</sup> CGCGC	G	-	50-75	100	75-100	50-75	50-75	50	65°C
BseX3 I	C <sup>^</sup> GGCCG	O	-	10-25	25-50	100	50-75	10-25	50	80°C
BslF I	GGGAC(10/14)	Y	+	25-50	25-50	10-25	25-50	100	37	80°C

Bso31 I	GGTCTC(1/5)	O	+	25-50	75-100	100	75-100	25-50	55	80°C
Bsp13 I	T <sup>^</sup> CCGGA	2K	-	25-50	50-75	75-100	50-75	0-10	50	65°C
Bsp1720 I	GC <sup>^</sup> TNAGC	G	-	50-75	100	50-75	50-75	75-100	37	80°C
Bsp19 I	C <sup>^</sup> CATGG	2W	+	0-10	10-25	50-75	75-100	10-25	37	65°C

\* - supplied with its own unique reaction buffer that is different from the five standard SE-Buffers.

## SE Buffer Activity Chart for Restriction Enzymes

Enzyme	Recognition sequence	SE Buffer	BSA	Activity (% from maximum)					Optimum t, °C	Inactivation, 20min
				B	G	O	W	Y		
BspAC I	CCGC(-3/-1)	O	+	10-25	25-50	100	75-100	10-25	37	65°C
BspFN I	CG <sup>^</sup> CG	Y	-	50-75	75-100	75-100	50-75	100	37	65°C
BssEC I	C <sup>^</sup> CNNGG	Y	-	50-75	50-75	50-75	75-100	100	60	80°C
BssNA I	GTA <sup>^</sup> TAC	W	+	50-75	50-75	75-100	100	75-100	37	No
BssT1 I	C <sup>^</sup> CWWGG	2K	-	10-25	25-50	25-50	75-100	10-25	60	80°C
Bst2B I	CTCGTG(-5/-1)	Y	+	75-100	25-50	10-25	25-50	100	60	80°C
Bst2U I	CC <sup>^</sup> WGG	G	+	75-100	100	50-75	50-75	10-25	60	80°C
Bst4C I	ACN <sup>^</sup> GT	Y	-	75-100	75-100	10-25	25-50	100	65	80°C
Bst6 I	CTCTTC(1/4)	Y	+	75-100	75-100	50-75	75-100	100	65	80°C
BstAC I	GR <sup>^</sup> CGYC	W	-	75-100	75-100	50-75	100	75-100	37	80°C
BstAF I	C <sup>^</sup> TTAAG	W	+	10-25	25-50	75-100	100	25-50	55	80°C
BstAP I	GCANNN <sup>^</sup> NTGC	W	-	25-50	25-50	75-100	100	25-50	60	80°C
BstAU I	T <sup>^</sup> GTACA	W	-	10-25	50-75	25-50	100	25-50	37	80°C
BstBA I	YAC <sup>^</sup> GTR	W	+	25-50	25-50	75-100	100	25-50	65	80°C
BstC8 I	GCN <sup>^</sup> NGC	Y	-	10-25	25-50	50-75	75-100	100	55	80°C
BstDE I	C <sup>^</sup> TNAG	G	-	75-100	100	25-50	50-75	10-25	60	80°C
BstDS I	C <sup>^</sup> CRYGG	Y	-	0-10	75-100	50-75	25-50	100	65	80°C
BstEN I	CCTNN <sup>^</sup> NNNAGG	Y	-	50-75	50-75	25-50	25-50	100	65	80°C
BstF5 I	GGATG(2/0)	Y	-	75-100	50-75	25-50	50-75	100	65	80°C
BstFN I	CG <sup>^</sup> CG	Y	-	75-100	50-75	25-50	25-50	100	60	80°C
BstH2 I	RGCGC <sup>^</sup> Y	Y	+	50-75	50-75	0-10	10-25	100	65	80°C
BstHH I	GCG <sup>^</sup> C	Y	+	75-100	50-75	25-50	50-75	100	50	No
BstKI I	GAT <sup>^</sup> C	W	-	25-50	50-75	75-100	100	50-75	37	65°C
BstMA I	GTCTC(1/5)	W	+	25-50	50-75	50-75	100	75-100	55	65°C
BstMB I	<sup>^</sup> GATC	O	-	10-25	25-50	100	75-100	10-25	65	80°C
BstMC I	CGRY <sup>^</sup> CG	B	+	100	75-100	10-25	10-25	50-75	50	80°C
BstMW I	GCNNNN <sup>^</sup> NNGC	Y	-	10-25	25-50	25-50	50-75	100	55	80°C
BstNS I	RCATN <sup>^</sup> Y	B	+	100	50-75	10-25	10-25	75-100	37	65°C
BstPA I	GACNN <sup>^</sup> NNGTC	Y	-	50-75	25-50	50-75	50-75	100	65	No
BstSC I	<sup>^</sup> CCNNGG	Y	-	50-75	50-75	50-75	50-75	100	55	80°C
BstSF I	C <sup>^</sup> TRYAG	O	+	75-100	25-50	100	50-75	50-75	60	No
BstSL I	GKGCM <sup>^</sup> C	G	+	50-75	100	50-75	75-100	75-100	55	65°C
BstSN I	TAC <sup>^</sup> GTA	B	-	100	50-75	0-10	10-25	50-75	37	80°C
BstV1 I	GCAGC(8/12)	G	-	75-100	100	75-100	75-100	75-100	55	80°C
BstV2 I	GAAGAC(2/6)	Y	+	75-100	75-100	25-50	25-50	100	55	65°C
BstX I	CCANNNNN <sup>^</sup> NTGG	O	-	10-25	10-25	100	75-100	25-50	37	65°C
BstX2 I	R <sup>^</sup> GATCY	G	-	75-100	100	0-10	10-25	25-50	60	80°C
BsuR I	GG <sup>^</sup> CC	G	-	75-100	100	25-50	50-75	50-75	37	80°C
Btr I	CACGTC(-3/-3)	O	+	75-100	75-100	100	75-100	75-100	60	80°C
Cci I	T <sup>^</sup> CATGA	W	+	0-10	10-25	25-50	100	75-100	55	80°C
CciN I	GC <sup>^</sup> GGCCGC	Y	-	25-50	50-75	75-100	75-100	100	37	65°C
Dra I	TTT <sup>^</sup> AAA	G	+	75-100	100	25-50	75-100	75-100	37	65°C
Dra III	CACNNN <sup>^</sup> GTG	2K	+	25-50	50-75	75-100	75-100	50-75	37	65°C
Dri I	GACNNN <sup>^</sup> NNGTC	Y	-	75-100	75-100	10-25	10-25	100	37	65°C

DseD I	GACNNNN <sup>^</sup> NNGTC	Y	+	75-100	75-100	25-50	50-75	100	37	80°C
EcoICR I	GAG <sup>^</sup> CTC	G	+	75-100	100	0-10	0-10	75-100	37	65°C
EcoR I	G <sup>^</sup> AATTC	*	+	50-75	75-100	75-100	100	50-75	37	65°C
EcoR V	GAT <sup>^</sup> ATC	W	+	0-10	25-50	50-75	100	25-50	37	80°C
Ege I	GGC <sup>^</sup> GCC	B	+	100	75-100	10-25	50-75	75-100	37	65°C
Erh I	C <sup>^</sup> CWWGG	2W	+	10-25	25-50	25-50	75-100	10-25	37	65°C
Fae I	CATG <sup>^</sup>	Y	+	25-50	50-75	10-25	10-25	100	37	65°C
Fai I	YA <sup>^</sup> TR	B	-	100	50-75	10-25	25-50	25-50	50	80°C
Fal I	(8/13)AAG(N) <sub>5</sub> CTT(13/8)	W+SAM	-	0-10	25-50	75-100	100	50-75	37	65°C
Fat I	<sup>^</sup> CATG	G	-	10-25	100	25-50	10-25	50-75	55	65°C
Fau I	CCCGC(4/6)	B	-	100	25-50	0-10	0-10	50-75	55	65°C
FauND I	CA <sup>^</sup> TATG	Y	+	50-75	75-100	10-25	50-75	100	37	65°C
Fbl I	GT <sup>^</sup> MKAC	Y	-	50-75	75-100	0-10	50-75	100	55	80°C
Fok I	GGATG(9/13)	Y	-	50-75	50-75	25-50	25-50	100	37	65°C
FriO I	GRGCY <sup>^</sup> C	Y	+	75-100	75-100	10-25	0-10	100	37	65°C
Fsp4H I	GC <sup>^</sup> NGC	Y	-	50-75	75-100	10-25	25-50	100	37	65°C

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## SE Buffer Activity Chart for Restriction Enzymes

Enzyme	Recognition sequence	SE Buffer	BSA	Activity (% from maximum)					Optimum t, °C	Inactivation, 20min
				B	G	O	W	Y		
Gla I	G(5mC) <sup>^</sup> G(5mC)	*	-	75-100	75-100	75-100	75-100	90-100	30	65°C
Glu I	(5mC)G(5mC) <sup>^</sup> NG(5mC)	*	-	75-100	75-100	75-100	75-100	75-100	37	65°C
Gsa I	CCCAG <sup>^</sup> C	W	+	10-25	25-50	75-100	100	75-100	70	No
Hae III	GG <sup>^</sup> CC	G	-	75-100	100	25-50	50-75	50-75	37	80°C
Hga I	GACGC(5/10)	B	-	100	75-100	10-25	25-50	50-75	37	65°C
Hind II	GTY <sup>^</sup> RAC	G	+	75-100	100	25-50	25-50	75-100	37	65°C
Hind III	A <sup>^</sup> AGCTT	W	+	10-25	25-50	0-10	100	0-10	37	80°C
Hinf I	G <sup>^</sup> ANTC	O	-	25-50	75-100	100	75-100	75-100	37	80°C
Hpa I	GTT <sup>^</sup> AAC	Y	-	0-10	50-75	10-25	25-50	100	37	65°C
Hpa II	C <sup>^</sup> CGG	B	-	100	50-75	10-25	25-50	50-75	37	80°C
HspA I	G <sup>^</sup> CGC	Y	-	50-75	50-75	25-50	25-50	100	37	80°C
Kpn I	GGTAC <sup>^</sup> C	B	+	100	25-50	25-50	25-50	75-100	37	80°C
Ksp22 I	T <sup>^</sup> GATCA	2K	+	50-75	100	50-75	50-75	25-50	37	65°C
Kzo9 I	<sup>^</sup> GATC	G	-	50-75	100	50-75	50-75	50-75	37	65°C
Mab I	A <sup>^</sup> CCWGGT	W	+	25-50	50-75	75-100	100	50-75	37	65°C
Mal I	G(mA) <sup>^</sup> TC	*	-	25-50	25-50	50-75	75-100	50-75	37	65°C
Mbo II	GAAGA(8/7)	Y	-	75-100	75-100	25-50	50-75	100	37	65°C
Mfe I	C <sup>^</sup> AATTG	B	+	100	75-100	10-25	25-50	75-100	37	80°C
Mhl I	GDGCH <sup>^</sup> C	W	-	10-25	25-50	75-100	100	10-25	37	80°C
Mlu I	A <sup>^</sup> CGCGT	O	-	0-10	10-25	100	25-50	10-25	37	65°C
Mly113 I	GG <sup>^</sup> CGCC	B	-	100	25-50	10-25	10-25	50-75	37	65°C
Mnl I	CCTC(7/6)	G	+	75-100	100	25-50	25-50	75-100	37	65°C
MroN I	G <sup>^</sup> CCGGC	B	-	100	50-75	10-25	0-10	10-25	37	80°C
MroX I	GAANN <sup>^</sup> NNTTC	W	-	50-75	50-75	50-75	100	25-50	37	65°C
Msp I	C <sup>^</sup> CGG	B	-	100	75-100	50-75	75-100	75-100	37	65°C
Msp20 I	TGG <sup>^</sup> CCA	W	+	50-75	50-75	25-50	100	50-75	37	65°C
MspA1 I	CMG <sup>^</sup> CKG	Y	-	10-25	75-100	10-25	25-50	100	37	65°C
MspR9 I	CC <sup>^</sup> NGG	O	-	50-75	50-75	100	50-75	75-100	37	80°C
Nru I	TCG <sup>^</sup> CGA	W	-	0-10	10-25	75-100	100	10-25	37	80°C

PalA I	GG^CGCGCC	Y	-	25-50	10-25	0	0	100	37	65°C
Pce I	AGG^CCT	Y	-	75-100	75-100	50-75	25-50	100	50	80°C
Pci I	A^CATGT	O	-	50-75	75-100	100	75-100	50-75	37	65°C
PciS I	GCTCTTC(1/4)	B	-	100	50-75	0-10	0-10	75-100	37	65°C
Pct I	GAATGC(1/-1)	O	-	25-50	50-75	100	75-100	10-25	37	65°C
Ple19 I	CGAT^CG	Y	-	75-100	75-100	25-50	25-50	100	37	65°C
Pps I	GAGTC(4/5)	Y	+	50-75	10-25	0-10	25-50	100	37	65°C
Psi I	TTA^TAA	B	-	100	25-50	10-25	25-50	75-100	37	65°C
Psp124B I	GAGCT^C	G	-	75-100	100	10-25	0-10	75-100	37	80°C
Psp6I	^CCWGG	B	-	100	50-75	10-25	25-50	75-100	55	80°C
PspC I	CAC^GTG	B	+	100	50-75	0	0	50-75	37	65°C
PspE I	G^GTNACC	B	-	100	50-75	25-50	50-75	50-75	37	65°C
PspL I	C^GTACG	Y	+	75-100	75-100	25-50	10-25	100	37	65°C
PspN4 I	GGN^NCC	Y	-	10-25	10-25	10-25	25-50	100	37	65°C
PspOM I	G^GGCCC	Y	-	75-100	10-25	0-10	0-10	100	37	65°C
PspPP I	RG^GWCCY	Y	+	50-75	25-50	10-25	10-25	100	37	65°C
PspX I	VC^TCGAGB	Y	+	50-75	50-75	25-50	75-100	100	37	80°C
Psr I	(7/12)GAAC(N) <sub>6</sub> TAC(12/7)	Y	+	10-25	10-25	0	0-10	100	30	65°C
Pst I	CTGCA^G	O	+	10-25	25-50	100	25-50	25-50	37	80°C
Pvu II	CAG^CTG	G	+	25-50	100	25-50	25-50	25-50	37	80°C
Rga I	GCGAT^CGC	Y	-	75-100	50-75	10-25	25-50	100	55	80°C
Rig I	GGCCGG^CC	*	+	75-100	50-75	0-10	10-25	50-75	37	65°C
Rsa I	GT^AC	B	-	100	50-75	0-10	50-75	75-100	37	80°C
RsaN I	G^TAC	B	-	100	75-100	50-75	50-75	75-100	37	80°C
Rsr2 I	CG^GWCCG	Y	+	50-75	75-100	0-10	10-25	100	37	65°C
Sal I	G^TCGAC	O	-	0-10	10-25	100	25-50	0-10	37	65°C
Sbf I	CCTGCA^GG	Y	-	75-100	50-75	0-10	0-10	100	37	80°C
Set I	ASST^	Y	-	25-50	25-50	75-100	75-100	100	55	80°C
SfaN I	GCATC(5/9)	O	-	10-25	25-50	100	75-100	0-10	37	80°C
Sfi I	GGCCN <sub>3</sub> NNN^NGGCC	G	+	75-100	100	25-50	25-50	25-50	50	65°C

\* - supplied with its own unique reaction buffer that is different from the five standard SE-Buffers.

## SE Buffer Activity Chart for Restriction Enzymes

Enzyme	Recognition sequence	SE Buffer	BSA	Activity (% from maximum)					Optimum t, °C	Inactivation, 20min
				B	G	O	W	Y		
Sfr274 I	C^TCGAG	B	-	100	75-100	50-75	50-75	75-100	50	65°C
Sfr303 I	CCGC^GG	B	-	100	50-75	10-25	10-25	75-100	37	65°C
Sma I	CCC^GGG	Y	-	0-10	0-10	0-10	0-10	100	25	65°C
Smi I	ATTT^AAAT	O	+	25-50	25-50	100	75-100	25-50	37	65°C
SmiM I	CAYNN^NNRTG	W	-	10-25	10-25	75-100	100	10-25	37	65°C
Sph I	GCATG^C	G	+	25-50	100	75-100	75-100	50-75	37	65°C
Sse9 I	^AATT	B	+	100	75-100	50-75	50-75	75-100	55	65°C
Ssp I	AAT^ATT	K	+	75-100	50-75	25-50	50-75	75-100	37	65°C
Taq I	T^CGA	Y	+	50-75	75-100	75-100	50-75	100	65	80°C
Tru9 I	T^TAA	W	-	75-100	25-50	25-50	100	50-75	65	80°C
Tth111 I	GACN^NNGTC	Y	-	75-100	50-75	10-25	10-25	100	65	80°C
Vne I	G^TGCAC	O	-	10-25	25-50	100	25-50	25-50	37	65°C
Vsp I	AT^TAAT	W	-	0-10	10-25	50-75	100	25-50	37	65°C
Xba I	T^CTAGA	O	+	75-100	75-100	100	50-75	75-100	37	65°C
Xma I	C^CCGGG	Y	-	75-100	50-75	0	0-10	100	37	65°C
Zra I	GAC^GTC	B	-	100	50-75	25-50	25-50	75-100	37	80°C
Zrm I	AGT^ACT	Y	+	50-75	25-50	0-10	0-10	100	37	65°C
Zsp2 I	ATGCA^T	B	+	100	50-75	25-50	25-50	25-50	37	65°C
N-Bst9 I	GAGTC(4/-)	*	-	10-25	75-100	100	100	50-75	55	80°C

\* - supplied with its own unique reaction buffer that is different from the five standard SE-Buffers.

## Isoschizomers

Enzyme	SE Enzyme	Enzyme	SE Enzyme	Enzyme	SE Enzyme	Enzyme	SE Enzyme	Enzyme	SE Enzyme
AasI	DseDI	AvaI	Ama87I	Bse3DI	Bse3DI	BsrFI	Bse118I	Bsu36I	Bse21I
AatI	PceI	AvaII	Bme18I	BseGI	BstF5I	BsrGI	BstAUI	BsuRI	BsuRI
AatII	AatII	AvaIII	Zsp2I^	BseGI	FokI^	BsrSI	Bse1I	BsuRI	HaeIII
AbsI	AbsI	AviI	Acc16I	BseJI	Bse8I	BssAI	Bse118I	BsuTUI	Bsa29I
AccI	FbII	AvrII	AspA2I	BseLI	Bsc4I	BssECI	BssECI	BtgI	BstDSI
AccII	BstFNI	AxyI	Bse21I	BseMI	Bse3DI	BssHI	Sfr274I	BtrI	BtrI
AccIII	Bsp13I	Ball	Msp20I	BseNI	Bse1I	BssHII	BsePI	BveI	Acc36I
Acc16I	Acc16I	BamHI	BamHI	BsePI	BsePI	BssKI	MspR9I^	Cac8I	BstC8I
Acc36I	Acc36I	BanI	AccB1I	BseSI	BstSLI		BstSCI	CauII	AsuC2I
Acc65I	Acc65I	BanII	FriOI	BseXI	BstVII	BssNAI	BssNAI	CciI	CciI
	KpnI^	BanIII	Bsa29I	BseX3I	BseX3I	BssSI	Bst2BI	CciNI	CciNI
AccB1I	AccB1I	BarI	BarI	BseYI	GsaI	BssTII	BssTII	CelII	Bsp1720I
AccB7I	AccB7I	BbeI	EgeI^	Bsh1236I	BstFNI		ErhI	Cfol	AspLEI
AccBSI	AccBSI		Mly113I^^	Bsh1285I	BstMCI	Bst6I	Bst6I		BstHHI
AccI	BspACI	BbrPI	PspCI	BshFI	BsuRI	Bst98I	BstAFI		HspAI^
AccII	AccII	BbsI	BstV2I		HaeIII	Bst1107I	BssNAI	CfrI	AcoI
AccWI	AccWI	BbuI	SphI	BshNI	AccB1I	BstACI	BstACI	Cfr9I	XmaI
AcoI	AcoI	BbvI	BstV1I	BshTI	AsiGI	BstAFI	BstAFI		SmaI^
AcsI	AcsI	BbvII	BstV2I	Bsil	Bst2BI	BstAPI	BstAPI	Cfr10I	Bse118I
AcuI	AcuI	Bbv12I	Bbv12I	BsiEI	BstMCI	BstAUI	BstAUI	Cfr13I	AspS9I
AcvI	PspCI	BclI	Ksp22I	BsiHKA I	Bbv12I	BstBI	Bpu14I	Cfr42I	Sfr303I
AcyI	BstACI	BenI	AsuC2I	BsiHKCI	Ama87I	Bst2BI	Bst2BI	Clal	Bsa29I
AdeI	DraIII	BcuI	AhlI	BsiSI	HpaII	BstBAI	BstBAI	CpoI	Rsr2I
AfaI	RsaI	BfiI	BmuI		MspI	Bst4CI	Bst4CI	CspI	Rsr2I
AfeI	AfeI	Bfml	BstSFI	BsiWI	PspLI	BstC8I	BstC8I	Csp6I	Rsal^
AflII	BstAFI	Bfrl	BstAFI	BsiYI	Bsc4I	BstDEI	BstDEI	Csp45I	Bpu14I
AgeI	AsiGI	BfrBI	Zsp2I^	BslI	Bsc4I	BstDSI	BstDSI	CspAI	AsiGI
AgsI	AgsI	BfuAI	Acc36I	BslFI	BslFI	BstEII	PspEI	CviAII	FaeI^^
AhaIII	DraI	BfuCI	BstMBI	BsmFI	BslFI^	BstENI	BstENI		FatI^
AhdI	DriI		BstKTI^	BsmI	PctI	BstF5I	BstF5I	DdeI	BstDEI
AhlI	AhlI		Kzo9I	BsmAI	BstMAI		FokI^	DpnI	MaiI
Ajnl	Ajnl	BglI	BglI	Bso3II	Bso3II	BstFNI	BstFNI	DpnII	BstMBI
	Bst2UI^	BglII	BglII	BsoBI	Ama87I	BstH2I	BstH2I		Kzo9I
	Psp6I	BlnI	AccWI	BsoMAI	BstMAI	BstHHI	BstHHI		BstKTI^
AluI	AluI	BisI	BisI	Bsp13I	Bsp13I		AspLEI	DraI	DraI
	AluBI	BlnI	AspA2I	Bsp19I	Bsp19I		HspAI^	DraIII	DraIII
AluBI	AluBI	BlpI	Bsp1720I	Bsp68I	NruI	BstKTI	BstKTI	DrdI	DseDI
AlwI	AccWI	BlsI	BlsI	Bsp106I	Bsa29I		BstMBI^	DriI	DriI
Alw21I	Bbv12I	Bme18I	Bme18I	Bsp119I	Bpu14I		Kzo9I^	Dsal	BstDSI
Alw26I	BstMAI	Bme1390I	MspR9I	Bsp120I	PspOMI	BstMBI	BstKTI^	DseDI	DseDI
Alw44I	VneI		BstSCI^		ApaI^	BstMBI	BstMBI	EaeI	AcoI
Ama87I	Ama87I	BmgBI	BtrI	Bsp143I	BstMBI		Kzo9I	EagI	BseX3I
Aor51HI	AfeI	BmtI	BmtI		Kzo9I	BstMCI	BstMCI	Eam1104I	Bst6I
Apal	Apal		AsuNHI^		BstKTI^	BstMWI	BstMWI	Eam1105I	DriI
	PspOMI^	BmyI	MhII	Bsp143II	BstH2I	BstNI	Ajnl^	EarI	Bst6I
ApaBI	BstAPI^	BoxI	BstPAI	Bsp1286I	MhII		Bst2UI	Ecl136II	EcoCRI
ApaLI	VneI	Bpil	BstV2I	Bsp1407I	BstAUI		Psp6I^		Psp124BI^
ApoI	AcsI	Bpml	Bpml	Bsp1720I	Bsp1720I	BstNSI	BstNSI	EclHKI	DriI
ArsI	ArsI	Bpu10I	Bpu10I	BspACI	BspACI	BstOI	Ajnl^	EclXI	BseX3I
AscI	PalAI	Bpu14I	Bpu14I	BspANI	BsuRI		Bst2UI	Eco24I	FriOI
AseI	VspI	Bpu1102I	Bsp1720I		HaeIII		Psp6I^	Eco31I	Bso31I
AsiGI	AsiGI	BpuAI	BstV2I	BspCI	Ple19I	BstPI	PspEI	Eco32I	EcoRV
AsiSI	AsiSI	BsaI	Bso31I	BspDI	Bsa29I	BstPAI	BstPAI	Eco47I	Bme18I
AspI	Tth111I	Bsa29I	Bsa29I	BspeI	Bsp13I	BstSCI	BstSCI	Eco47III	AfeI
Asp700I	MroXI	BsaAI	BstBAI	BspFNI	BspFNI		MspR9I^	Eco52I	BseX3I
Asp718I	Acc65I	BsaBI	Bse8I	BspHI	CciI	BstSFI	BstSFI	Eco57I	AcuI
	KpnI^	BsaHI	BstACI	BspLU	PspN4I	BstSLI	BstSLI	Eco72I	PspCI
AspA2I	AspA2I	BsaJI	BssECI	BspLU11I	PciI	BstSNI	BstSNI	Eco81I	Bse21I
AspEI	DriI	BsaMI	PctI	BspMI	Acc36I	BstUI	BstFNI	Eco88I	Ama87I
AspHI	Bbv12I	Bsc4I	Bsc4I	BspMII	Bsp13I	Bst2UI	Ajnl^	Eco91I	PspEI
AspLEI	AspLEI	Bse1I	Bse1I	BspMAI	PstI		Bst2UI	Eco105I	BstSNI
	BstHHI	Bse8I	Bse8I	BspPI	AccWI		Psp6I^	Eco130I	BstTII
	HspAI^	Bse21I	Bse21I	BspTI	BstAFI	BstVII	BstVII		ErhI
AspS9I	AspS9I	Bse118I	Bse118I	BspT104I	Bpu14I	BstV2I	BstV2I	Eco147I	PceI
AsuI	AspS9I	BseAI	Bsp13I	BspT107I	AccB1I	BstXI	BstXI	EcoCRI	EcoCRI
AsuII	Bpu14I	BseBI	Ajnl^	BspTNI	Bso31I	BstX2I	BstX2I		Psp124BI^
AsuC2I	AsuC2I		Bst2UI	BspXI	Bsa29I	BstYI	BstX2I	EcoNI	BstENI
AsuHPI	AsuHPI		Psp6I^	BsrI	Bse1I	BstZI	BseX3I	EcoO65I	PspEI
AsuNHI	AsuNHI	BseCI	Bsa29I	BsrBI	AccBSI	BstZ17I	BssNAI	EcoRI	EcoRI
	BmtI^	BseDI	BssECI	BsrDI	Bse3DI	Bsu15I	Bsa29I		

## Isoschizomers

<b>Enzyme</b>	<b>SE Enzyme</b>	<b>Enzyme</b>	<b>SE Enzyme</b>	<b>Enzyme</b>	<b>SE Enzyme</b>	<b>Enzyme</b>	<b>SE Enzyme</b>	<b>Enzyme</b>	<b>SE Enzyme</b>
EcoRII	Ajnl	Hinfl	Hinfl	Mval	Bst2UI	PspAI	XmaI	SlaI	Sfr274I
	Bst2UI <sup>^</sup>	HpaI	HpaI		Psp6I <sup>^</sup>	Psp124BI	EcoICRI <sup>^</sup>	SmaI	SmaI
	Psp6I	HpaII	HpaII	Mva1269I	PctI		Psp124BI		XmaI <sup>^</sup>
EcoRV	EcoRV		MspI	MvnI	BstFNI	PspCI	PspCI	SmiI	SmiI
EcoT14I	BssT1I	HphI	AsuHPI	Mwol	BstMWI	PspEI	PspEI	SmiMI	SmiMI
	ErhI	HpyCH4III	Bst4CI	NaeI	MroNI <sup>^</sup>	PspGI	Ajnl	SmuI	FauI
EcoT22I	Zsp2I	HpyF10VI	BstMWI	NarI	EgeI <sup>^</sup>		Bst2UI <sup>^</sup>	SnaI	BssNAI
EcoT38I	FriOI	Hsp92I	BstACI		Mly113I		Psp6I	SnaBI	BstSNI
EgeI	EgeI	Hsp92II	FatI <sup>^</sup>	NciI	AsuC2I	PspLI	PspLI	SpaHI	SphI
	Mly113I <sup>^</sup>	HspAI	AspLEI <sup>^</sup>	NcoI	Bsp19I	PspN4I	PspN4I	SpeI	AhlI
EheI	EgeI		BstHHI <sup>^</sup>	NdeI	FauNDI	PspOMI	ApaI <sup>^</sup>	SphI	SphI
	Mly113I <sup>^</sup>		HspAI	NdeII	BstMBI		PspOMI	SpII	PspLI
ErhI	BssT1I	ItaI	Fsp4HI		Kzo9I	PspPI	AspS9I	Sse9I	Sse9I
	ErhI	KasI	EgeI <sup>^</sup>		BstKTI <sup>^</sup>	PspPPI	PspPPI	Sse8387I	SbfI
EspI	Bsp1720I		Mly113I <sup>^^</sup>	NgoMIV	MroNI	PspXI	PspXI	SseBI	PceI
FaeI	FaeI	KpnI	KpnI	NheI	AsuNHI	PspXI	PsrI	SsiI	BspACI
Fail	Fail		Acc65I <sup>^</sup>		BmtI <sup>^</sup>	PstI	PstI	Sspl	Sspl
Fall	Fall	Kpn2I	Bsp13I	NlaIII	FaeI	PsuI	BstX2I	SspBI	BstAUI
FatI	FaeI <sup>^</sup>	KspI	Sfr303I		FatI <sup>^</sup>	PsyI	Tth111I	SstI	EcoICRI <sup>^</sup>
FauI	FauI	Ksp22I	Ksp22I	NlaIV	PspN4I	PvuI	Ple19I		Psp124BI
FauNDI	FauNDI	Ksp632I	Bst6I	NotI	CciNI	PvuII	PvuII	StuI	PceI
FbaI	Ksp22I	KspAI	HpaI	NruI	NruI	RgaI	RgaI	StyI	BssT1I
FblI	FblI	Kzo9I	BstMBI	NsbI	Acc16I	RigI	RigI		ErhI
FinI	BsIFI		Kzo9I	NsiI	Zsp2I	RsaI	RsaI	StyD4I	BstSCI
FnuDII	BspFNI		BstKTI <sup>^</sup>	NspI	BstNSI		RsaNI <sup>^</sup>	StyD4I	MspR9I <sup>^</sup>
	BstFNI	LweI	SfaNI	NspIII	Ama87I	RsaNI	RsaNI	SunI	PspLI
Fnu4HI	Fsp4HI	MabI	MabI	NspV	Bpu14I	RsrII	Rsr2I	SwaI	SmiI
FokI	FokI	Mall	Mall	NspBII	MspA1I	Rsr2I	Rsr2I	Taal	Bst4CI
	BstF5I <sup>^</sup>	MamI	Bse8I	PaeI	SphI	SacI	EcoICRI <sup>^</sup>	Taq I	TaqI
FriOI	FriOI	MbiI	AccBSI	Paer7I	Sfr274I		Psp124BI	TasI	Sse9I
FseI	RigI	MboI	BstMBI	PalI	BsuRI	SacII	Sfr303I	TelI	Tth111I
FspI	Acc16I		BstKTI <sup>^</sup>	Paul	BsePI	Sall	Sall	TliI	Sfr274I
Fsp4HI	Fsp4HI	MboII	MboII	PceI	PceI	SapI	PciSI	TruI	Tru9I
FunI	AfeI	McrI	BstMCI	PciI	PciI	SatI	Fsp4HI	Tru9I	Tru9I
FunII	EcoRI	MfeI	MfeI	PciSI	PciSI	SauI	Bse21I	Tsp509I	Sse9I
Gla I	Gla I	MflI	BstX2I	PctI	PctI	Sau96I	AspS9I	Tsp4CI	Bst4CI
Glul	Glul	MhII	MhII	PdiI	MroNI <sup>^</sup>	Sau3AI	BstMBI	TspEI	Sse9I
Gsal	Gsal	MlsI	Msp20I	Pdml	MroXI		Kzo9I	Tth111I	Tth111I
GsuI	Bpml	MluI	MluI	Pfl23II	PspLI	Sbfl	Sbfl	Van9II	AccB7I
HaeII	BstH2I	MluNI	Msp20I	PfIBI	AccB7I	Scal	Zrml	VneI	VneI
HaeIII	BsuRI	MlyI	PpsI <sup>^</sup>	PfIFI	Tth111I	SchI	PpsI <sup>^</sup>	VpaK11BI	Bme18I
	HaeIII	Mly113I	EgeI <sup>^</sup>	PfIMI	AccB7I	ScrFI	BstSCI <sup>^</sup>	Vspl	Vspl
HapII	HpaII		Mly113I	PhoI	BsuRI		MspR9I	XagI	BstENI
	MspI	MnlI	MnlI		HaeIII	SdaI	Sbfl	XapI	AcsI
HgaI	HgaI	Mph1103I	Zsp2I	PinAI	AsiGI	SduI	MhII	XbaI	XbaI
HgiAI	Bbv12I	MroI	Bsp13I	PleI	PpsI	SecI	BsseCI	Xcel	BstNSI
HgiCI	AccB1I	MroNI	MroNI	Ple19I	Ple19I	SetI	SetI	XhoI	Sfr274I
HgiJII	FriOI	MroXI	MroXI	PmaCI	PspCI	SexAI	MabI	XhoII	BstX2I
HhaI	AspLEI	MscI	Msp20I	PmlI	PspCI	SfaNI	SfaNI	XmaI	SmaI <sup>^</sup>
	BstHHI	MseI	Tru9I	PpsI	PpsI	Sfcl	BstSFI		XmaI
	HspAI <sup>^</sup>	MslI	SmiMI	PpuMI	PspPPI	Sfel	BstSFI	XmaIII	BseX3I
HinII	BstACI	MspI	HpaII	PpuXI	PspPPI	Sfil	Sfil	XmaCI	SmaI <sup>^</sup>
Hin6I	AspLEI <sup>^</sup>		MspI	PshAI	BstPAI	Sfol	EgeI		XmaI
	BstHHI <sup>^</sup>	Msp20I	Msp20I	PshBI	VspI		Mly113I <sup>^</sup>	XmaJI	AspA2I
	HspAI	MspA1I	MspA1I	Psil	Psil	Sfr274I	Sfr274I	Xmnl	MroXI
HinP1I	AspLEI <sup>^</sup>	MspCI	BstAFI	Psp5II	PspPPI	Sfr303I	Sfr303I	ZhoI	Bsa29I
	BstHHI <sup>^</sup>	MspR9I	BstSCI <sup>^</sup>	Psp6I	Ajnl	Sful	Bpu14I	ZraI	AatlI <sup>^</sup>
	HspAI		MspR9I		Bst2UI <sup>^</sup>	Sgfl	AsiSI		ZraI
HincII	HindII	MstI	Acc16I		Psp6I		RgaI	Zrml	Zrml
HindII	HindII	MunI	MfeI	Psp1406I	AclI	SgrBI	Sfr303I	Zsp2I	Zsp2I
HindIII	HindIII	MvaI	Ajnl <sup>^</sup>	PspAI	SmaI <sup>^</sup>	SinI	Bme18I		

## Alphabetized List of SE Recognition Sequences

AA^CGTT	Acl I	C^CGG	Msp I	GACNNN^NNGTC	Dri I
A^AGCTT	Hind III	CC^NGG	MspR9 I	GACNNNN^NNGTC	DseD I
(8/13)AAGN <sub>3</sub> CTT(13/8)	Fal I	^CCNGG	BstSC I	(8/13)GAC(N) <sub>6</sub> TTYG(11/6)	Ars I
AAT^ATT	Ssp I	C^CNNGG	BssEC I	(5/4)GACTC	Pps I
^AATT	Sse9 I	CCNNNNN^NNGG	Bsc4 I	(5/1)GAGAC	BstMA I
A^CATGT	Pci I	C^CRYGG	BstDS I	(5/1)GAGACC	Bso31 I
A^CCGGT	AsiG I	CC^SGG	AsuC2 I	GAG^CGG	AccBS I
ACCTGC(4/8)	Acc36 I	C^CTAGG	AspA2 I	GAG^CTC	EcoCR I
A^CCWGGT	Mab I	CCTC(7/6)	MnlI	GAGT^C	Psp124B I
A^CGCGT	Mlu I	CC^TCGAGG	Abs I	(6/7)GAGG	Mnl I
ACN^GT	Bst4C I	CCTGCA^GG	Sbf I	GAGTC(4/5)	Pps I
A^CTAGT	Ahl I	CC^TNAGC	Bpu10 I	G^ANTC	Hinf I
ACTGG(1/-1)	Bse1 I	CC^TNAGG	Bse21 I	GAT^ATC	EcoR V
ACTGGG(5/4)	Bmu I	CCTNN^NNNAGG	BstEN I	G(mA)^TC	Mal I
A^GATCT	Bgl II	^CCWGG	Psp6 I	^GATC	BstMB I
AGC^GCT	Afe I	CC^WGG	Bst2U I	^GATC	Kzo9 I
AG^CT	Alu I	C^CWWGG	BssT1 I	GAT^C	BstKTI
AG^CT	AluB I	C^CWWGG	Erh I	(5/4)GATCC	AclW I
AGG^CCT	Pee I	CGAT^CG	Ple19 I	(9/5)GATGC	SfaN I
AGG^CGG	AccBS I	CG^CG	BspFN I	GATNN^NNATC	Bse8 I
AGT^ACT	Zrm I	CG^CG	BstFN I	GCAATG(2/0)	Bse3D I
ASST^	Set I	(5mC)G(5mC)^NG(5mC)G	GluI	GCAGC(8/12)	BstV1 I
AT^CGAT	Bsa29 I	C^GGCCG	BseX3 I	(8/4)GCAGGT	Acc36 I
ATGCA^T	Zsp2 I	CG^GWCCG	Rsr2 I	GCANNNN^NTGC	BstAP I
AT^TAAT	Vsp I	CGRY^CG	BstMC I	GCATC(5/9)	SfaN I
ATTT^AAAT	Smi I	C^GTACG	PspL I	GCATG^C	Sph I
CCANNNN^NTGG	AccB7 I	CMG^CKG	MspA I	(-1/1)GCATTC	Pet I
CCANNNNN^NTGG	BstX I	(14/16)CTCCAG	Bpm I	G^CCGGC	MroN I
C^AATTG	Mfe I	C^TCGAG	Sfr274 I	GCCNNNN^NGGC	Bgl I
C^ACGAG	Bst2B I	C^TCGTG	Bst2B I	GCGAT^CGC	AsiS I
CAC^GTC	Btr I	CTCTTC(1/4)	Bst6 I	GCGAT^CGC	Rga I
CAC^GTG	PspC I	CTGAAG(16/14)	Acu I	G^CGC	HspA I
CACNNN^GTG	Dra III	CTGCA^G	Pst I	GCG^C	AspLE I
CAG^CTG	Pvu II	CTGGAG(16/14)	Bpm I	GCG^C	BstHH I
CA^TATG	FauND I	C^TNAG	BstDE I	G^CGCGC	BseP I
(13/9)CATCC	Fok I	C^TRYAG	BstSF I	(-1/-3)GCGG	BspAC I
(0/2)CATCC	BstF5 I	C^TTAAG	BstAF I	GC^GGCCGC	CciN I
CATG^	Fae I	(14/16)CTTCAG	Acu I	(6/4)GCGGG	Fau I
^CATG	Fat I	C^YCGRG	Ama87 I	(10/5)GCGTC	Hga I
(0/2)CATTGC	Bse3D I	(7/12)GAAC(N) <sub>6</sub> TAC(12/7)	Psr I	GC^NGC	Fsp4H I
CAYNN^NNRTG	SmiM I	GAAGAC(2/6)	BstV2 I	G(5mC)^ G(5mC)	Gla I
(-1/1)CCAGT	Bse1 I	(4/1)GAAGAG	Bst6 I	G(5mC)^NGC	Bis I
CCANNNN^NTGG	AccB7 I	(4/1)GAAGAGC	PciS I	G(5mC)N^GC	Bls I
C^CATGG	Bsp19 I	(7/12)GAAG(N) <sub>6</sub> TAC(12/7)	Bar I	GCN^NGC	BstC8 I
CCCAG^C	Gsa I	GAANN^NNTTC	MroX I	GCNNNNN^NNGC	BstMW I
(4/5)CCCAGT	Bmu I	GAATGC(1/-1)	Pct I	G^CTAGC	AsuNH I
CCCGC(4/6)	Fau I	G^AATTC	EcoR I	GCTAG^C	Bmt I
CCC^GGG	Sma I	GACGC(5/10)	Hga I	GCTCTTC(1/4)	PciS I
C^CCGGG	Xma I	GACGT^C	Aat II	(12/8)GCTGC	BstV1 I
CCGC(-3/-1)	BspAC I	GAC^GTC	Zra I	G^CTGGG	Gsa I
CCG^CCT	AccBS I	GAC^GTG	Btr I	GC^TNAGC	Bst1720 I
CCGC^GG	Sfr303 I	GACN^NNGTC	Tth111 I	GC^TNAGG	Bpu10 I
C^CGG	Hpa II	GACNN^NNGTC	BstPA I	GDGCH^C	Mhl I

**R = A or G**

**K = G or T**

**D = A or G or T**

**W = A or T**

**M = A or C**

**H = A or C or T**

**S = G or C**

**Y = T or C**

**V = A or C or G**

**B = C or G or T**

**N = A or C or G or T**

## Alphabetized List of SE Recognition Sequences

GGATC(4/5)	AclW I	G^GYRCC	AccB1 I	RGCGC^Y	BstH2 I
G^GATCC	BamH I	GKGC M^C	BstSL I	RG^GWCCY	PspPP I
GGATG(2/0)	BstF5 I	GR^CGYC	BstAC I	TAC^GTA	BstSN I
GGATG(9/13)	Fok I	GRGCY^C	FriO I	(7/8)TCACC	AsuHP I
GG^CC	BsuR I	GT^AC	Rsa I	T^CATGA	Cci I
GG^CC	Hae III	G^TAC	RsaN I	T^CCGGA	Bsp13 I
GGCCGG^CC	Rig I	(7/12)GTA(N) <sub>6</sub> CTTC(12/7)	Bar I	T^CGA	Taq I
GGCCNNNN^NGGCC	Sfi I	(7/12)GTA(N) <sub>6</sub> GTTC(12/7)	Psr I	TCG^CGA	Nru I
GG^CGCC	Mly113 I	GTA^TAC	BssNA I	T^CTAGA	Xba I
GGC^GCC	Ege I	(14/10)GTCCC	BslF I	T^GATCA	Ksp22 I
GG^CGCGCC	PalA I	G^TCGAC	Sal I	TGC^GCA	Acc16 I
GGGAC(10/14)	BslF I	GTCTC(1/5)	BstMA I	TGG^CCA	Msp20 I
G^GGCCC	PspOM I	(6/2)GTCTTC	BstV2 I	T^GTACA	BstAU I
GGGCC^C	Apa I	G^TGCAC	Vne I	T^TAA	Tru9 I
G^GNCC	AspS9 I	GT^MKAC	Fbl I	TTA^TAA	Psi I
GGN^NCC	PspN4 I	GTT^AAC	Hpa I	TT^CGAA	Bpu14 I
G^GTACC	Acc65 I	GTY^RAC	Hind II	TTS^AA	Ags I
GGTAC^C	Kpn I	GWGCW^C	Bbv12 I	TTT^AAA	Dra I
GGTCTC(1/5)	Bso31 I	R^AATTY	Acs I	VC^TCGAGB	PspX I
GGTGA(8/7)	AsuHP I	RCATG^Y	BstNS I	YAC^GTR	BstBA I
G^GTNACC	PspE I	R^CCGGY	Bse118 I	YA^TR	Fai I
G^GWCC	Bme18 I	R^GATCY	BstX2 I	Y^GGCCR	Aco I

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**H = A or C or T**

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**N = A or C or G or T**