Compatible Cohesive Ends

Restriction endonucleases that produce compatible cohesive ends often produce recleavable ligation products. The combinations listed were identified by computer analysis, and although we have tried to ensure their accuracy, they have not necessarily been confirmed by experimentation. Where isoschizomers exist, only one member of each set is listed. Enzymes that have degenerate recognition sequences (i.e. recognize more than one sequence) are followed by a specific sequence in parentheses and are only listed if a non-degenerate equivalent does not exist. Be aware that these degenerate enzymes will cleave sequences in addition to the one listed.

Enzyme	Ligated to	Recleaved by
Acc65 I (G^GTACC)	Ban I (G^GTACC) BsiW I, BsrG I	Acc65 I, Ban I, Kpn I, Nla IV, Rsa I Rsa I
Acc I (GT^CGAC) (GT^CGAC)	Aci I, Acl I, BsaH I (GR^CGYC), HinP1 I, Hpa II, Nar I Cla I, BstB I, Taq I	-- Taq I
Aci I (C^CGC)	Acc I (GT^CGAC), Acl I, Cla I, BstB I, Taq I BsaH I (GR^CGCC), HinP1 I, Nar I Hpa II	-- Aci I Hpa II
Acl I (AA^CGTT)	Acc I (GT^CGAC), Aci I, Cla I, BstB I, HinP1 I, Hpa II, Nar I, Taq I	--
Age I (A^CCGGT)	Ava I (C^CCGGG), Xma I BsaW I, BspE I BsrF I (A^CCGGT), SgrA I (CA^CCGGTG) NgoM IV	Hpa II, Nci I, ScrF I BsaW I, Hpa II, Age I, BsaW I, BsrF I, Hpa II, BsrF I, Hpa II
Apa I (GGGCC^C)	Ban II (GGGCC^C), Bsp1286 I (GGGCC^C)	Apa I, Ban II, Bsp120 I, Bsp1286 I, Hae III,Nla IV, Sau96 I
ApaL I (G^TGCAC)	Sfc I (C^TGCAG)	Bsg I
Apo I (A^AATTY) (G^AATTY) (R^AATTY)	 EcoR I EcoR I Mfe I, Tsp509 I	 Apo I, Tsp509 I Apo I, EcoR I, Tsp509 I Tsp509 I
Asc I (GG^CGCGCC)	Afl III (A^CGCGT), Mlu I BssH I	BstU I, Hha I BssH II, BstU I, Cac8 I, Hha I
Ase I (AT^TAAT)	Bfa I, Csp6 I, Nde I Mse I	-- Mse I
AsiS I (GCGAT^CGC)	BsiE I (CGAT^CG) Pac I Pvu I	Dpn II, Pvu I Mse I Dpn II, Pvu I
Ava I (C^CCGGG) (C^TCGAG) (C^TCGAG) (C^CCGGG)	 Age I, BsaW I, BspE I, BsrF I (R^CCGGY), NgoM IV, SgrA I (CR^CCGGYG) Xho I Sal I Xma I	Hpa II, Nci I, ScrF I Ava I, Taq I, Xho I Taq I Ava I, BsaJ I, Hpa II, Nci I, ScrF I, Sma I
Ava II (G^GWCC)	PpuM I (RG^GACCY) Rsr II PpuM I (RG^GTCCY)	Ava II, Nla IV, Sau96 I Ava II, Sau96 I Ava II, BsmF I, Nla IV, Sau96 I
Avr II (C^CTAGG)	Nhe I, Spe I, Xba I Sty I (C^CTAGG)	Bfa I Avr II, Bfa I, BsaJ I, Sty I
BamH I (G^GATCC)	Bcl I, Dpn II Bgl II, BstY I (R^GATCY) BstY I (G^GATCC)	Alw I, Dpn II Alw I, BstY I, Dpn II Alw I, BamH I, BstY I, Dpn II, Nla IV
Ban I (G^GTACC) (G^GCGCC) (G^GTACC)	 Acc65 I Kas I BsiW I, BsrG I	 Acc65 I, Ban I, Kpn I, Nla IV, Rsa I Ban I, BsaH I, Hae II, Hha I, Kas I, Nar I, Nla IV Rsa I
Ban II (GGGCC^C) (GAGCT^C)	 Apa I, Bsp1286 I (GGGCC^C) Bsp1286 I (GAGCT^C), Sac I	 Apa I, Ban II, Bsp1286 I, Hae III, Nla IV, Sau96 I Alu I, Ban II, BsiHKA I, Bsp1286 I, Sac I
Bcl I (T^GATCA)	BamH I, BstY I (R^GATCY) Bgl II, Mbo II	Alw I, Dpn II Dpn II
Bfa I (C^TAG)	Ase I, Csp6 I, Mse I, Nde I	--

Enzyme	Ligated to	Recleaved by
Bgl II (A^GATCT)	BamH I, BstY I (R^GATCY) Bcl I, Dpn II	Alw I, BstY I, Dpn II Dpn II
BsaH I (GR^CGYC) (GA^CGYC) (GG^CGYC) (GG^CGYC) (GA^CGYC) (GG^CGYC)	 Acc I (GT^CGAC), Cla I, BstB I, Taq I Aci I, HinP1 I Aci I, HinP1 I Hpa II Nar I Nar I	 -- Hga I Hha I Aci I BsaH I, Hga I Ban I, BsaH I, Hae II, Hha I, Nar I, Nla IV
BsaW I (W^CCGGW)	Age I, BsrF I (R^CCGGY), SgrA I (CR^CCGGYG) Ava I (C^CCGGG), Xma I BspE I BsrF I (R^CCGGY), NgoM IV NgoM IV	Age I, BsaW I, BsrF I, Hpa II Hpa II, Nci I, ScrF I BsaW I, BspE I, Hpa II BsrF I, Hpa II Hpa II
BsiE I (CGAT^CG) (CGAT^CG) (CGGC^CG)	 Pac I Pvu I Sac II	 Mse I BsiE I, Dpn II, Pvu I Aci I
BsiHKA I (GTGCA^C)	Bsp1286 I (GTGCA^C) Bsp1286 I (GTGCA^C) Bsp1286 I (GTGCA^C), Sac I Nsi I Pst I, Sbf I	BsiHKA I, Bsp1286 I BsiHKA I, Bsp1286 I Alu I, Ban II, BsiHKA I, Bsp1286 I, Sac I -- Bsg I
BsiW I (C^GTACG)	Acc65 I, Ban I (G^GTACC), BsrG I	Rsa I
Bsp1286 I (GGGCC^C) (GTGCA^C) (GGGCC^C) (GAGCT^C) (GWGCW^C) (GTGCA^C) (GTGCA^C)	 Apa I, Ban II (GGGCC^C) BsiHKA I Ban II (GGGCC^C) Ban II (GAGCT^C), BsiHKA I, Sac I BsiHKA I Nsi I Pst I, Sbf I	 Apa I, Ban II, Bsp1286 I, Hae III, Nla IV, Sau96 I ApaL I, BsiHKA I, Bsp1286 I Ban II, Bsp1286 I Alu I, Ban II, BsiHKA I, Bsp1286 I, Sac I BsiHKA I, Bsp1286 I -- Bsg I
BspE I (T^CCGGA)	Age I, BsaW I, BsrF I (R^CCGGY), SgrA I (CR^CCGGYG) Ava I (C^CCGGG), Xma I BsaW I BsrF I (R^CCGGY), NgoM IV	 BsaW I, Hpa II Hpa II, Nci I, ScrF I BsaW I, BspE I, Hpa II Hpa II
BspH I (T^CATGA)	Fat I, Nco I, Pci I	Fat I, Nla III
BsrF I (A^CCGGY) (G^CCGGY) (R^CCGGY) (A^CCGGY) (R^CCGGY) (G^CCGGY) (CR^CCGGYG)	 Age I, BsaW I Age I, BsaW I, NgoM IV Ava I (C^CCGGG), Xma I BsaW I, BspE I BsaW I, BspE I NgoM IV SgrA I	 Age I, BsaW I, BsrF I, Hpa II BsrF I, Hpa II Hpa II, Nci I, ScrF I BsaW I, Hpa II Hpa II BsrF I, Cac8 I, Hpa II, Nae I BsrF I, Hpa II
BsrG I (T^GTACA)	Acc65 I, Ban I (G^GTACC), BsiW I	Rsa I
BssH II (G^CGCGC)	Afl III (A^CGCGT), Mlu I Asc I	BstU I, Hha I BssH II, BstU I, Cac8 I, Hha I
BstB I (TT^CGAA)	Acc I (GT^CGAC), Cla I, Taq I Aci I, Acl I, BsaH I (GR^CGYC), HinP1 I, Hpa II, Nar I	Taq I --
BstY I (A^GATCY) (G^GATCY) (R^GATCY) (G^GATCY) (A^GATCY)	 BamH I, Bgl II BamH I Bcl I, Dpn II Bcl I, Dpn II Bgl II	 Alw I, BstY I, Dpn II Alw I, BamH I, BstY I, Dpn II, Nla IV Dpn II Alw I, Dpn II Bgl II, BstY I, Dpn II

Enzyme	Ligated to	Recleaved by
Cla I (AT^CGAT)	Acc I (GT^CGAC), BstB I, Taq I Aci I, Acl I, BsaH I (GR^CGYC), HinP1 I, Hpa II, Nar I	Taq I --
Dpn II / Mbo I / Sau3A I (^GATC)	BamH I, BsrY I (R^GATCC) Bcl I, Bgl II, BstY I (R^GATCY)	Alw I, Dpn II Dpn II
Eae I (Y^GGCCR) (C^GGCCR) (T^GGCCR) (C^GGCCR) (T^GGCCR)	 Psp0M I Eag I Eag I Not I Not I	 Hae III, Sau96 I BsiE I, Eae I, Eag I, Hae III Eae I, Hae III Aci I, BsiE I, Eae I, Eag I, Fnu4H I, Hae III Aci I, Eae I, Fnu4H I, Hae III
Eag I (C^GGCCG)	Psp0M I Eae I (Y^GGCCR) Eae I (G^GGCCR) Not I	Hae III, Sau96 I Eae I, Hae III BsiE I, Eae I, Eag I, Hae III Aci I, BsiE I, Eae I, Eag I, Fnu4H I, Hae III
EcoR I (G^AATTC)	Apo I (G^AATTC) Apo I (R^AATTY) Mfe I, Tsp509 I	Apo I, EcoR I, Tsp509 I Apo I, Tsp509 I Tsp509 I
Fat I (^CATG)	BspH I, Nco I, Pci I	Fat I, Nla III
HinP1 I (G^CGC)	Acc I (GT^CGAC), Acl I, Cla I, BstB I, Taq I Aci I, BsaH I (GR^CGCC), Nar I BsaH I (GR^CGTC) Hpa II	-- Hha I Hga I Aci I
Hpa II / Msp I (C^CGG)	Acc I (GT^CGAC), Acl I, Cla I, BstB I, Taq I Aci I, BsaH I (GR^CGCC), HinP1 I, Nar I	-- Aci I
Kas I (G^GCGCC)	Ban I (G^GCGCC)	Ban I, BsaH I, Hae II, Hha I, Kas I, Nar I, Nla IV
Mfe I (C^AATTG)	Apo I (R^ATTTY), EcoR I, Tsp509 I	Tsp509 I
Mlu I (A^CGCGT)	Afl III (A^CGCGT) Asc I, BssH II	Afl III, BstU I, Mlu I BstU I, Hha I
Mse I (T^TAA)	Ase I Bfa I, Csp6 I, Nde I	Mse I --
Nar I (GG^CGCC)	Acc I (GT^CGAC), Acl I, Cla I, BstB I, Taq I Aci I, HinP1 I BsaH I (GR^CGCC) BsaH I (GR^CGTC) Hpa II	-- Hha I Ban I, BsaH I, Hae II, Hha I, Nar I, Nla IV BsaH I, Hga I Aci I
Nco I (C^CATGG)	BspH I, Fat I, Pci I	Fat I, Nla III
Nde I (CA^TATG)	Ase I, Bfa I, Csp6 I, Mse I	--
NgoM IV (G^CCGGC)	Age I, BsaW I, BsrF I (R^CCGGY), SgrA I Ava I (C^CCGGG), Xma I BsaW I, BspE I BsrF I (R^CCGGC), SgrA I	BsrF I, Hpa II Hpa II, Nci I, ScrF I Hpa II BsrF I, Cac8 I, Hpa II, Nae I
Nhe I (G^CTAGC)	Avr II, Spe I, Sty I (C^CTAGG), Xba I	Bfa I
Nla III (CATG^)	Sph I, Nsp I	Nla III
Not I (GC^GGCCGC)	Psp0M I Eag I Eae I (Y^GGCCR)	Aci I, Eae I, Fnu4H I, Hae III Aci I, BsiE I, Eae I, Eag I, Fnu4H I, Hae III Aci I, BsiE I, Eae I, Fnu4H I, Hae III
Nsi I (ATGCA^T)	BsiHKA I (GTGCA^C), Bsp1286 I (GTGCA^C), Pst I, Sbf I	--
Nsp I (RCATG^Y)	Nla III, Sph I	Nla III
Pac I (TTAAT^TAA)	BsiE I (CGAT^CG), Pvu I	Mse I
Pci I (A^CATGT)	BspH I, Fat I, Nco I	Fat I, Nla III
PpuM I (RG^GWCCY) (GG^GTCCY) (GG^GACCY)	 Ava II, Rsr II Ava II, Rsr II Ava II, Rsr II	 Ava II, Sau96 I Ava II, BsmF I, Nla IV, Sau96 I Ava II, Nla IV, Sau96 I

Enzyme	Ligated to	Recleaved by
Psp0M I (G^GGCCC)	Eae I (Y^GGCCR), Eag I Not I	Hae III, Sau96 I Aci I, Fnu4H I, Hae III, Sau96 I
PspX I (VC^TCGAGB)	Xho I, Tli I Sal I	Xho I, Tli I Taq I
Pst I (CTGCA^G)	BsiHKA I, Bsp1286 I (GTGCA^C) Nsi I Sbf I	Bsg I -- Pst I
Pvu I (CGAT^CG)	AsiS I Pac I BsiE I (CGAT^CG)	Dpn I, Pvu I Mse I BsiE I, Dpn II, Pvu I
Rsr II (CG^GWCCG)	Ava II, PpuM I (RG^GACCY) PpuM I (RG^GACCY) PpuM I (RG^GTCCY)	Ava II, Sau96 I Ava II, Nla IV, Sau96 I Ava II, BsmF I, Nla IV, Sau96 I
Sac I (GAGCT^C)	Ban II (GAGCT^C), BsiHKA I, Bsp1286 I (GAGCT^C)	Alu I, Ban II, BsiHKA I, Bsp1286 I, Sac I
Sac II (CCGC^GG)	BsiE I (CGGC^CG)	Aci I
Sal I (G^TCGAC)	PspX I, Xho I	Taq I
Sbf I (CCTGCA^GG)	BsiHKA I, Bsp1286 I (GTGCA^C) Nsi I Pst I	Bsg I -- Pst I
Sfc I (C^TGCAG)	ApaL I	Bsg I
SgrA I (CR^CCGGYG)	See BsrF I	
Spe I (A^CTAGT)	Avr II, Nhe I, Sty I (C^CTAGG), Xba I	Bfa I
Sph I (GCATG^C)	Nla III, Nsp I	Nla III
Sty I (C^CTAGG) (C^CATGG)	Avr II Nhe I, Spe I, Xba I BspH I Nco I	Avr II, Bfa I, BsaJ I, Sty I Bfa I Nla III BsaJ I, Nco I, Nla III, Sty I
Taq I (T^CGA)	AccI (GT^CGAC), Cla I, BstB I Aci I, Acl I, BsaH I (GR^CGYC), HinP1 I, Hpa II, Nar I	Taq I --
Tsp509 I (^AATT)	Apo I (R^AATTY), EcoR I, Mfe I	Tsp509 I
Xba I (T^CTAGA)	Avr II, Nhe I, Spe I, Sty I (C^CTAGG)	Bfa I
Xho I / Tli I (C^TCGAG)	PspX I Sal I	Xho I, Tli I Taq I
Xma I (C^CCGGG)	Age I, BsaW I, BspE I, BsrF I, NgoM IV, SgrA I Ava I (C^CCGGG)	Hpa II, Nci I, ScrF I, Ava I, BsaJ I, Hpa II, Nci I, ScrF I, Sma I, Xma I