

Activity of Invitrogen Restriction Endonucleases in REact® Buffers

Each restriction endonuclease exhibits 100% unit activity in its specific REact® Buffer (bold in chart). Altering the salt conditions can change a restriction endonuclease's activity. The following table indicates the activity of Invitrogen™ restriction endonucleases in REact® Buffers 1–8. If doing a double digestion, see protocol entitled “Digesting DNA with Two Restriction Endonucleases.”

Table 1 - Activity of Invitrogen™ Restriction Endonucleases in REact® Buffers

Restriction Endonuclease	REact® 1	REact® 2	REact® 3	REact® 4	REact® 5	REact® 6	REact® 7	REact® 8
<i>Acc</i> I	100	< 10	60	40	75	< 10	< 10	60
<i>Alu</i> I	100	55	< 10	75	100	60	75	100
<i>Apa</i> I	20	< 10	< 10	100	100	< 10	< 10	100
<i>Ava</i> I	100	100	100	75	100	< 10	75	55
<i>Bam</i> H I	100	40	100	100	100	100	40	100
<i>Bgl</i> II	< 10	100	100	< 10	< 10	55	30	< 10
<i>Cla</i> I	100	100	100	100	100	100	100	100
<i>Dde</i> I	75	100	100	75	75	75	100	55
<i>Dpn</i> I	60	< 10	< 10	100	75	75	75	75
<i>Dra</i> I	100	100	60	100	100	25	75	100
<i>Eco</i> R I	100 ^a	100	100	40	20	100	100	20
<i>Eco</i> R V	40	100	100	20	< 10	100	100	< 10
<i>Hae</i> III	100	100	75	100	75	100	75	55
<i>Hha</i> I	100	100	100	30	75	75	100	20
<i>Hinc</i> II	< 10	15	< 10	100	< 10	20	15	15
<i>Hind</i> III	55	100	20	15	15	< 10	20	a
<i>Hinf</i> I	100	100	100	40	40	100	100	40
<i>Hpa</i> I	20	30	< 10	100	15	15	20	15
<i>Hpa</i> II	55	20	< 10	100	100	15	< 10	100
<i>Kpn</i> I	100	20	< 10	100	100	< 10	< 10	100
<i>Mbo</i> I	75	100	100	30	20	55	75	10
<i>Mlu</i> I	15	55	100	30	< 10	75	75	< 10
<i>Msc</i> I	100	100	40	20	55	< 10	75	30
<i>Mse</i> I	100	40	55	55	100	< 10	55	100
<i>Nco</i> I	100	100	100	100	60	100	100	a
<i>Nde</i> I	20	100	100	100	< 10	100	100	< 10
<i>Nhe</i> I	100	< 10	< 10	100	55	< 10	< 10	75
<i>Not</i> I	< 10	40	100	< 10	< 10	55	55	< 10

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Activity of Invitrogen Restriction Endonucleases in REact® Buffers, continued

Table 1 - Activity of Invitrogen Restriction Endonucleases in REact® Buffers, continued

Restriction Endonuclease	REact® 1	REact® 2	REact® 3	REact® 4	REact® 5	REact® 6	REact® 7	REact® 8
<i>Nru</i> I	< 10	30	100	55	< 10	100	100	< 10
<i>Nsi</i> I	55	100	100	30	20	100	100	< 10
<i>PinA</i> I	55	40	< 10	100	30	40	< 10	30
<i>Pst</i> I	100	100	30	100	100	100	30	100
<i>Pvu</i> I	100	100	100	40	40	40	100	40
<i>Pvu</i> II	55	75	20	100	75	100	30	75
<i>Rsa</i> I	100	< 10	< 10	15	40	< 10	< 10	30
<i>Sal</i> I ^b	< 10	75	55	< 10	10	75	75	a
<i>Sca</i> I	< 10	< 10	< 10	< 10	< 10	100	30	a
<i>Sma</i> I	< 10	< 10	< 10	100	< 10	< 10	< 10	< 10
<i>Spe</i> I	100	< 10	< 10	100	75	< 10	< 10	100
<i>Sph</i> I	100	100	55	100	75	100	40	100
<i>Ssp</i> I	75	100	100	55	< 10	100	55	a
<i>Sst</i> I	100	100	< 10	20	55	< 10	75	100
<i>Sst</i> II	100	100	15	55	100	75	30	55
<i>Stu</i> I	100	100	55	40	40	< 10	40	a
<i>Taq</i> I	75	100	55	55	< 10	< 10	100	< 10
<i>Xba</i> I	55	100	40	55	< 10	100	40	20
<i>Xho</i> I	55	100	40	a	15	15	a	20

^a Use of this REact® buffer with this enzyme is NOT recommended because of apparent increases in contaminating or star activity.

^b *Sal* I requires REact® buffer 10 for 100% activity. Please refer to the product insert for buffer composition.

Heat Inactivation

The following enzymes are >95% inactivated following incubation at 65°C for 10 minutes.

<i>Alu</i> I	<i>Eco</i> O109 I	<i>Msp</i> I	<i>Rsr</i> II
<i>Alw</i> N I	<i>Eco</i> R II	<i>Nar</i> I	<i>Sau</i> 3A I
<i>Apa</i> I	<i>Eco</i> R V	<i>Nco</i> I	<i>Sca</i> I
<i>Ava</i> II	<i>Fsp</i> I	<i>Nde</i> II	<i>Sfi</i> I
<i>Bgl</i> I	<i>Hae</i> II	<i>Ngo</i> A IV	<i>Spe</i> I
<i>Bss</i> H II	<i>Hha</i> I	<i>Not</i> I	<i>Sph</i> I
<i>Bst</i> X I	<i>Hinc</i> II	<i>Nsp</i> I	<i>Ssp</i> I
<i>Cvn</i> I	<i>Kpn</i> I	<i>Pin</i> A I	<i>Sst</i> I
<i>Dpn</i> I	<i>Mbo</i> I	<i>Rca</i> I	<i>Stu</i> I
<i>Dra</i> I	<i>Msc</i> I	<i>Rsa</i> I	<i>Sty</i> I

Enzymes not listed above may retain partial or full activity following heat inactivation protocols.

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