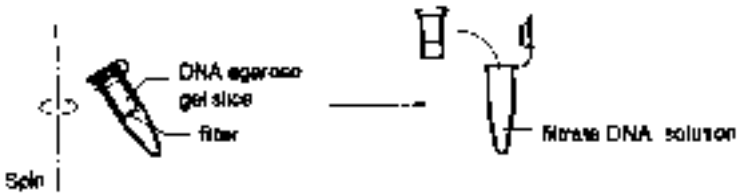
SUPREC™-01 Manual

v.02.04

Description: **SUPREC™-01 (100 cartridges)** **Cat.# 9040**

SUPREC™-01 is a filter cartridge designed for rapid recovery of DNA from agarose gels. After the DNA is separated by gel electrophoresis, the relevant slice of gel is excised, and inserted into the cartridge. The cartridge is then centrifuged. The DNA will elute out of the gel and pass through the cartridge filter into the lower portion of the tube. One cartridge can process up to 0.4 cm^3 agarose gel. The DNA will be recovered efficiently as a suitable preparation for subsequent manipulations such as cloning, sequencing, or enzymatic cleavage and modifications.



Storage: **ambient temperature**

Notes:

1. To use the SUPREC™-01 cartridges, you will need a microcentrifuge compatible with standard 1.5 ml (or 2.0 ml) microcentrifuge tubes.
2. Before centrifugation, confirm that the lids of the tubes are securely closed.
3. Swing- or angle-type rotors can be used.
4. The cartridges are not tested for the absence or presence of RNase and should not be used to recover RNA.
5. The cartridges cannot be used to extract DNA from polyacrylamide gels.
6. Performance is not guaranteed if the tubes are replaced by other commercially available microcentrifuge tubes.

A. The basic procedure

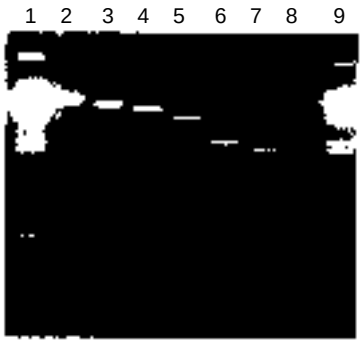
1) Separate DNA fragments by agarose gel electrophoresis.
2) Excise the band of the desired DNA out from the gel. Insert the gel slice in the upper cartridge. For DNA fragments exceeding 1 kb, the gels should be cut into small pieces prior to extraction to improve the yield.*
3) Centrifuge at 4°C, 5,000 x *g*, 10 minutes.
4) Add 200 μl of TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0) to the gel slice.
5) Centrifuge at 4°C, 5,000 x *g*, 10 minutes.
6) Discard the upper cartridge, and precipitate the DNA recovered in the filtrate by ethanol**. Dry the DNA precipitate completely.
7) Dissolve the DNA precipitate in appropriate buffer.

* If Tris-acetate buffers (TAE) are used in gels and electrophoretic running buffers, the recovery yield of the DNA will be improved when the gel slice is frozen and thawed prior to centrifugation. After the gels are placed in the upper filter cartridge they can be frozen in a -20°C (or a -80°C) freezer, or the cartridge can simply be immersed in liquid nitrogen or in a dry-ice/ethanol bath. Then the gels can be thawed by incubating the cartridge at 37°C for 5 minutes.

The gel should be completely thawed prior to centrifugation, as frozen gels will often break through the filter during centrifugation. (See EXAMPLE for comparison of TAE buffers and TBE buffer)

** The recovery of DNA by ethanol precipitation can be improved if glycogen (c.a. 1 μg/100 μl final concentration) is added to the DNA solution as carrier.

EXAMPLE



Recovery of fragments generated by *Hin*d III cleavage of λ DNA

λ DNA (1.5 μg) was digested by *Hin*d III and was separated by 0.7% agarose gel electrophoresis. Each of the fragments were excised from the gel and then they were extracted from the respective gel slices with SUPREC-01™.

lanes
1: λ DNA *Hin*d III digest (1.5 μg)
2: λ DNA *Hin*d III fragment (23 kb): recovered from gel
3: λ DNA *Hin*d III fragment (9.4 kb): recovered from gel
4: λ DNA *Hin*d III fragment (6.6 kb): recovered from gel
5: λ DNA *Hin*d III fragment (4.4 kb): recovered from gel
6: λ DNA *Hin*d III fragment (2.3 kb): recovered from gel
7: λ DNA *Hin*d III fragment (2.0 kb): recovered from gel
8: λ DNA *Hin*d III fragment (0.5 kb): recovered from gel
9: λ DNA *Hin*d III digest (0.5 μg)

Recovery of kilobase fragments

The yield of kilobase fragments are higher when Tris-acetate buffer (TAE) is used for electrophoresis rather than Tris-borate buffer (TBE). Gel slices should be cut into smaller pieces and then frozen and thawed prior to centrifugation.

Fragment size	Recovery (%)	
	TAE	TBE
7.25 kb	20 (15)	10 (10)
3.16 kb	40 (30)	15 (20)

Numbers in parenthesis designate recovery yields when the agarose gel was not frozen prior to centrifugation.