Quantum Prep™ Freeze ‘N Squeeze DNA Gel Extraction Spin Columns

Introduction

Purification of double-stranded DNA fragments from TAE or TBE agarose gels with the Quantum Prep™ Freeze ‘N Squeeze DNA Gel Extraction Spin Column is quick and efficient. Unlike other DNA purification methods which are often time-consuming or involve toxic chaotropic materials, the Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column method purifies via filtration in a spin column format.

The spin column consists of a filter cup (with 0.45 µm cellose acetate filter) contained within a special 2.0 ml “dolphin” tube for collection of purified sample. The distinctive bottlenosed shape of the dolphin tube means recovered samples remain well below the bottom of the filter cup to insure purity. The extra long strap allows the cap to fit over either the filter cup during purification or to cap the collection tube itself for storage of the purified sample.

In this method, a DNA band of interest is excised from an agarose gel, and the gel slice cut into small pieces and placed into the filter cup. The cup plus gel pieces is put in a -20 °C freezer for 5 minutes (the freeze), then removed and immediately centrifuged at 13,000 x g for 3 minutes at room temperature (the squeeze). Agarose debris is retained within the filter cup; the liquid at the bottom of the tube contains the recovered DNA.

This method allows for recovery of DNA over a wide range of fragment sizes (50 bp to 23 kbp). The recovered DNA can be used for PCR, ligations, labeling or other enzymatic reactions without further purification or sample preparation.

Protocol

1. Electrophorese the DNA sample in an agarose gel (TAE or TBE), then stain with an appropriate reagent, e.g., ethidium bromide or SYBR™ Green I.
2. Using a clean razor blade, carefully excise the band of interest. Trim excess agarose from all six sides of the DNA band to maximize recovery and purity.
3. Chop the trimmed gel slice and place the pieces into the filter cup of the Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column. Place the filter cup into the dolphin tube.

   If the volume of your trimmed gel slice is too great to fit into one filter cup, then use two or more and pool the recovered samples at the end of the protocol.
4. Place the Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column (filter cup nested within dolphin tube) in a -20° C freezer for 5 minutes.
5. Spin the sample at 13,000 x g for 3 minutes at room temperature.
6. Collect the purified DNA from the collection tube; the agarose debris will be retained within the filter cup of the Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column. The DNA is ready to use for PCR, ligations, labeling or other enzymatic reactions. Ethanol precipitation is recommended for applications requiring a more concentrated sample and will also have the effect of further purifying the sample.

References

1. Thuring, R.W.J., Sanders, J.P.M. and Borst, P., *Anal. Biochem.*, **66**, 213, (1975).

Product Information

Catalog Number	Description
732-6165	**Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column**, 25 per bag
732-6166	**Quantum Prep Freeze ‘N Squeeze DNA Gel Extraction Spin Column**, 100 per bag
732-6160	**Quantum Prep Gel Slice Kit**