

Advantage of Genaxxons' JustSpin® columns

1. No need for special (low melting) agaroses.
2. No melting or lysis procedures to dissolve agarose.
3. No use of additional buffers or solutions.
4. No use of vacuum manifolds or subsequent centrifugation procedures.
5. No desalting procedures.
6. Can be used for small sized DNA up to greater than 20 kbp.
7. DNA directly usable for subsequent experiments (electrophoresis buffer may inhibit enzymes used in subsequent experiments). If this is the case, DNA in the eluate has to be precipitated and dissolved in 10 mM Tris-HCl, pH 8.0 or deionised, sterile water).

Related Products

| Product | Cat# | Package size |
|---|------------|--------------|
| Alligator Ligation kit | M3430.0030 | 30 reactions |
| Alligator Ligation kit with competent cells | M3431.0030 | 30 reactions |
| T4-DNA-Ligase | M3027.2000 | 2000 units |
| T4-DNA-Ligase | M3027.1010 | 10000 units |
| GenAgarose LE | M3044.0500 | 500 g |
| GenAgarose LE | M3044.1000 | 1 kg |
| GenAgarose Tiny (for small DNA fragments) | M3046.0100 | 100 g |



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Genaxxon BioScience JustSpin® Gel Extraction

| Product | Cat# | Package size |
|----------------------------------|------------|--------------|
| JustSpin® Gel Extraction columns | S5337.0004 | 4 columns |
| JustSpin® Gel Extraction columns | S5337.0050 | 50 columns |
| JustSpin® Gel Extraction columns | S5337.0250 | 250 columns |

Product description

The Genaxxon JustSpin® Gel Extraction spin columns are ready to use columns without need for equilibration, or similar procedures. Just cut out the DNA-band from the agarose gel place it on top of the column media, put the column into a 1.5mL tube and centrifuge at 5200 – 6200 g for 5-10 minutes at room temperature.

The eluate contains the DNA and can be used directly for cloning or other applications. If necessary, concentration of the eluate can be done by Ethanol or NaAc precipitation.

Supplied material

Spin columns (4, 50, 250 pieces) inserted in 1.5mL receiver tube with receiver tube lid (4, 50, 250 pieces) attached to the spin columns.

Properties – Quality Assurance

All supplied material is tested for RNase and DNase activity. RNase and DNase activity are not detectable.

Quality Control

The performance of the JustSpin® columns is monitored routinely on a lot-to-lot basis. Columns are tested by isolation of plasmid DNA from agarose gels with subsequent determination of yield (UV-measurement) and quality of the preparation (restriction endonuclease digestion and subsequent gel electrophoresis).

Stability and Storage

Columns can be stored at room temperature. Kit contains no component that has to be stored below RT. If columns are stored in the sealed bag, shelf life is > 2 years.

Protocol for isolation of DNA from agarose gels

Standard DNA isolation procedure with the JustSpin columns

1. Excise DNA band from agarose gel with a clean, sharp scalpel as sharp as possible * (as the volume of the eluate is proportional to the gel slide dimensions, the gel slide size should be as small as possible).
2. Open lid of the reaction tube and place the excised agarose slice into the spin column on top of the column media * (optimal if placed in the middle of the spin column insert on top of the column media).
3. Place the 1.5mL tube (including the spin column) in a centrifuge and centrifuge at 8000 – 8500 rpm for 5-10 minutes ** at room temperature.
4. The eluate contains the DNA. Normally you can use the eluate directly for cloning experiments or other applications without further purification or precipitation steps.

For further procedures please determine DNA concentration in eluate by UV-measurement, or just by taking 1 – 2µL of the eluate and running an analytical gel for a rough estimation of the DNA concentration. After determination of DNA concentration please proceed according your protocol for ligation, cloning, etc..

If DNA-concentration is too low for use in your application, please precipitate and dissolve in appropriate volume 10mM Tris-HCl, pH 8.0, or deionised, sterile water.

* It is not absolutely necessary, but it increases efficiency if the agarose slice is not bigger than the inner diameter of the spin column insert (ca. 3mm) on top of the separation media.

** The DNA slice might be still visible after centrifugation, especially at the rim of the tube.

DNA precipitation procedure

- Add sodium acetate (3M, pH 5.2) to the eluate to a final concentration of 0.3M (0.1 part of 3M NaAc to 1 part of eluate) and mix well. For high recovery glycogen or other commercial precipitation supports can be used.
- Add 2-3 volumes of ice-cold ethanol and mix well.
- Recover the precipitated DNA by centrifugation (> 18.000 g, 4°C, 15 minutes).
- Carefully discard the supernatant and air-dry the pellet at room temperature.
- Dissolve the DNA-pellet in the desired volume with 10mM Tris-HCl, pH 8.0 or deionised, sterile water.

Photometric Determination of DNA concentration and quality

A standard procedure for measuring DNA quality is the determination of the absorption quotient (Q) or readings at A_{260nm} and A_{280nm} .

$Q = (A_{260nm} - A_{320nm}) / (A_{280nm} - A_{320nm})$. For a pure DNA precipitation, Q lies between 1.7 and 2.0.

- Determination of DNA concentration is done by UV reading. Correct measurement is only possible if the DNA is free of RNA and readings are at values between 0.1 and 1 absorption units. DNA preparations should be vortexed shortly and diluted accordingly using 10mM Tris-HCl or water. As a blank you can use the pure buffer or water.
- DNA concentration ($\mu\text{g/ml}$) = $(A_{260nm} - A_{320nm}) \times 50$ (DNA extinction coefficient) x dilution factor.
- DNA yield (μg) = DNA concentration x sample volume (mL).