Genemed Synthesis, Inc.
6203 Wood Lake Center Dr., Bldg. 2, San Antonio, TX 78244, USA
Toll free (800) 344-5337; **Phone**: (210) 745-5988; **Fax** (210) 745-5992
Email: info@genemedsyn.com, **Website**: www.genemedsyn.com

Product Data Sheet

Cat # V-170-50	Gel Extraction System	**Size:** 50 Preps
Cat # V-170-250	Gel Extraction System	**Size:** 250 Preps

Gel Extraction System

GSI Gel Extraction System is designed to extract and purify DNA fragments from agarose gel. This system is based on binding of up to 10 μg DNA to silica-based membranes in chaotrophic salts with average recoveries of 50 to 80 % of 100-bp to 10-kb DNA fragments.

Downstream Application

* Sequancing & PCR
* Restriction digestion & enzymatic reaction
* Ligation
* Labeling & hybridization

Product Contents

Preps	4
GEX Buffer	10ml
WF Buffer	5ml
WS Buffer	1.5ml
Elution Buffer	0.5ml
Gel-M Column	4
Collection Tube	4
Protocol	1

Shipping & Storage

The sample of Gel Extraction System is shipping and storage at ambient temperature up to 6 months.

If precipitate form by freezing temperature on any buffer, warm up at 37℃ to redissolve.

Protocol

❖ **Please read the following notes before starting the procedures.**

- **WARNING**, strong acids and oxidants (like for instance bleach) should not be used together with GEX buffer (because this kind of reaction would produce cyanide)!!!

Important Notes

- Add 6 ml of 98 ~ 100 % ethanol to WS Buffer bottle when first open.
- Buffers provided in this system contain irritants. Appropriate safety apparels such as gloves and lab coat should be worn.
- All procedures should be done at room temperature (20 ~ 25 ℃).
- All centrifugation steps are done at full speed (10,000 x g or 13,000rpm) in a microcentrifuge.
- For long-term storage of the eluted DNA, TE buffer should be used for elution. Since EDTA in TE may affect downstream applications, Elution Buffer (provided) or ddH_2O (pH 7.0 ~ 8.5) is preferred for elution of DNA immediately used for further enzymatic reactions.

I. Protocol for Spin Method:

1. **Use a clean, sharp scalpel or razor blade to excise the gel slice containing the DNA fragment of interest.**
   Minimize the size of the gel slice by removing extra agarose. Cutting the gel slice into small pieces can facilitate dissolution.

2. Measure the weight of the gel slice (about 50-200 mg) and place it into a sterile 1.5-ml or 2-ml centrifuge tube. Add 0.5 ml GEX Buffer to it.
   When agarose percentage of the gel slice is more than 2 %, add GEX Buffer as 5 **volumes of the gel slice (100 mg = 0.1 ml).**

3. **Incubate at 60 ℃ for 5 to 10 minutes until the gel is completely dissolved. Invert the tube every 1-2 minutes during incubation.**

Genemed Synthesis, Inc.
6203 Wood Lake Center Dr., Bldg. 2, San Antonio, TX 78244, USA
Toll free (800) 344-5337; **Phone**: (210) 745-5988; **Fax** (210) 745-5992
Email: info@genemedsyn.com, **Website**: www.genemedsyn.com

Ensure that the gel has been completely dissolved before proceeding to step 4. If the gel slice has not been completely dissolved after 60℃ incubating for 5 to 10 minutes, the gel slice should be too large or more GEX Buffer should be added.

4. **Place a GEL extraction system Column onto a Collection Tube. Load no more than 0.7 ml dissolved gel mixture into the column. Centrifuge for 30-60 seconds. Discard the flow-through.**

5. **Repeat step 4 for the rest of the mixture.**

6. **Wash the column once with 0.5 ml of WF Buffer by centrifuging for 30-60 seconds. Discard the flow-through.**

7. **Wash the column once with 0.7 ml of WS Buffer by centrifuging for 30-60 seconds. Discard the flow-through.**
   Ensure that ethanol has been added into WS Buffer bottle when first open.

8. **Centrifuge the column at full speed for 3 minutes or more to remove residual ethanol.**
   Residual ethanol can affect the quality of DNA and inhibit subsequent enzymatic reactions.

9. **Place the column onto a new 1.5-ml centrifuge tube. Add 30-50 µl of Elution Buffer onto the center of the membrane.**
   For effective elution, make sure that the elution solution is dispensed onto the center of the membrane and is completely absorbed.

10. **Stand the column for 1-2 minutes and centrifuge for 1-2 minutes to elute DNA. Store DNA at −20 ℃.**

All buffers need to be mixed well before use.

II. Protocol for Vacuum Method:

1. Use a clean, sharp scalpel or razor blade to excise the gel slice containing the DNA fragment of interest.
   Minimize the size of the gel slice by removing extra agarose. Cutting the gel slice into small pieces can facilitate dissolution.

2. **Measure the weight of the gel slice (about 50-200 mg) and place it into a sterile 1.5-ml or 2-ml centrifuge tube. Add 0.5 ml GEX Buffer to it.**
   When agarose percentage of the gel slice is more than 2 %, add GEX Buffer as **5** volumes of the gel slice (100 mg = 0.1 ml).

3. **Incubate at 60 ℃ for 5 to 10 minutes until the gel is completely dissolved. Invert the tube every 1-2 minutes during incubation.**
   Ensure that the gel has been completely dissolved before proceeding to step 4. If the gel slice has not been completely dissolved after 60℃ incubating for 5 to 10 minutes, the gel slice should be too large or more GEX Buffer should be added.

4. **Insert a GEL extraction system Column into the luer-lock of a vacuum manifold (e.g. Promega's Vac-man*). Load no more than 0.7 ml of the dissolved gel mixture into the column. Apply vacuum to draw all the liquid into the manifold.**

5. **Repeat step 4 for the rest of the mixture.**

Genemed Synthesis, Inc.
6203 Wood Lake Center Dr., Bldg. 2, San Antonio, TX 78244, USA
Toll free (800) 344-5337; **Phone**: (210) 745-5988; **Fax** (210) 745-5992
Email: info@genemedsyn.com, **Website**: www.genemedsyn.com

6. **Wash the column once with 0.5ml of WF Buffer by re-applying vacuum to draw all the liquid.**

7. **Wash the column once with 0.7ml of WS Buffer by re-applying vacuum to draw all the liquid.**
   Ensure that ethanol has been added into WS Buffer bottle when first open.

8. **Place the column onto a Collection Tube. Centrifuge the column at full speed for 3 minutes or more to remove residual ethanol.**
   Residual ethanol can affect the quality of DNA and inhibit subsequent enzymatic reactions.

9. **Place the column onto a new 1.5-ml centrifuge tube. Add 30-50 µl of Elution Buffer onto the center of the membrane.**
   For effective elution, make sure that the elution solution is dispensed onto the center of the membrane and is completely absorbed.

Stand the column for 1-2 minutes and centrifuge for 1-2 minutes to elute DNA. Store DNA at –20 ℃