TREVIGEN®

Instructions for Use

*TreviGel™ 500 Powder

Cat# 9804-25-P	25 grams
Cat# 9804-50-P	50 grams
Cat# 9804-250-P	250 grams
Cat# 9804-500-P	500 grams

PCR** Fragment Separation Medium

DESCRIPTION

TreviGel™ 500, a blend of polysaccharides containing AgaCryl™, is ideal for separating and sharply resolving small DNA fragments generated by PCR, restriction digestion or other DNA manipulation. This product is available as a powder, which is quickly and easily prepared by heating in a TAE buffer that is typically used for agarose gel electrophoresis. This product replaces acrylamide in its separation properties in the range of 50 to 1300 bp, but does not have the neurotoxic properties of acrylamide.

The concentration of the powder can be adjusted to allow the optimal separation of DNA fragments from 50 to 1300 bp in size. These gels also have the advantage of being clear, reducing the background typical of agarose gels used at high concentrations, and increasing the sensitivity of detection. These gels are also extremely strong, and are difficult to rip or tear in comparison to acrylamide or agarose gels.

Related Products:
TreviTray™ Apparatus for casting and running TreviGel™ 500 and 5000 gels,
TreviGel™ 5000 Powder

FEATURES:

- ❑ Resolves <50 bp to 1300 bp
- ❑ Transparent
- ❑ Great Gel Strength
- ❑ Easy to Prepare
- ❑ Multiple Applications
- ❑ Available Precast
- ❑ Nontoxic
- ❑ Cost Effective

TreviGel™, TreviTray™ and AgaCryl™ are trademarks of Trevigen, Inc.

* TreviGel™ Product System is the subject of both a Trevigen patent application and an exclusive Trevigen license agreement

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**The polymerase chain reaction (PCR) process is covered by patents owned by Hoffmann-La Roche, Inc.

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Choice of Gel Concentration:

Gel Concentration (%)	Recommended Size of DNA Separation (bp)
0.5	300 - 1500
1.0	200 - 1000
1.5	150 - 800
2.0	50 - 600
2.5	48-500
3.0	45-400

Preparation of Gel Solution and Casting:

1. Setup a gel casting tray typically used for agarose gel electrophoresis or use a one, two, three or ten gel format TreviTray™ casting apparatus.

2. Make up an aqueous solution of the gel powder in an erlenmeyer flask.
   - Use the appropriate amount of solution for the gel casting tray.
   - TAE has been used with success with this gel mix, other buffers such as TBE are not recommended.

3. Heat the aqueous gel solution until the powder is in solution. Typically, a microwave is used. The TreviGel™ powder will go into solution almost as quickly as an agarose powder. The time will vary with the volume heated, the concentration of the gel mix and the power of the microwave. Typically, two to three minutes are adequate to allow the gel mix to go into solution.
   - Be careful that the flask does not overboil.
   - For best results, tare the solution before boiling, and make up any lost volume with deionized water.

4. Allow the solution to cool briefly at room temperature for approximately five minutes, then pour the gel in the casting tray. For the higher concentration gel mixes of 1.5 and 2.0 % the gel cannot be allowed to cool too long before casting, as it is extremely viscous and will form bubbles.
   - Carefully pour the gel mix avoiding the addition of bubbles. If bubbles are formed in the higher gel concentration, they can be removed by a gentle flaming on the top of the gel. (BE CAREFUL NOT TO MELT THE GEL CASTING APPARATUS!).
   - Ethidium bromide can be added to a final volume of 0.5 $\mu g.ml^{-1}$ in the liquefied gel mixture, but we do not recommend it for critical applications where the increased background will reduce sensitivity.

CRITICAL: (For Optimal Results)

Due to the viscosity of the the TreviGel™ 500 solution small bubbles can form affecting the quality of results. We STRONGLY recommend that you wait for all bubbles to stop forming, then wait an additional minute or two, before casting your TreviGel™.

5. Allow the gel mixture to harden. It is now ready to electrophorese, however, cooling the gel at 4°C for 20 to 30 minutes increases the resolving power.

6. Add the DNA samples with loading buffer and electrophorese the samples.
   - The loading dye can contain bromophenol dye, however, we do not recommend it. The bromophenol dye "blocks" the DNA bands electrophoresing at the same position as this dye, and may not be visible in the gel photograph. A dye which migrates faster than the DNA bands being analyzed, such as Orange-G is preferred.
   - While the DNA can be electrophoresed at the maximum speed possible in the gel apparatus, we recommend slower electrophoresis speeds to optimize resolution. (For example: 25 to 50 volts for about 2 to 3 hours for a 20 cm long gel.) An 8 cm long TreviTray gel can be run at 100 V for 1 hour.

7. To visualize DNA bands we recommend staining the gel with a solution of 0.5 μg/ml of ethidium bromide for about 30 minutes, followed by destaining in water or TAE buffer for about 30 minutes.

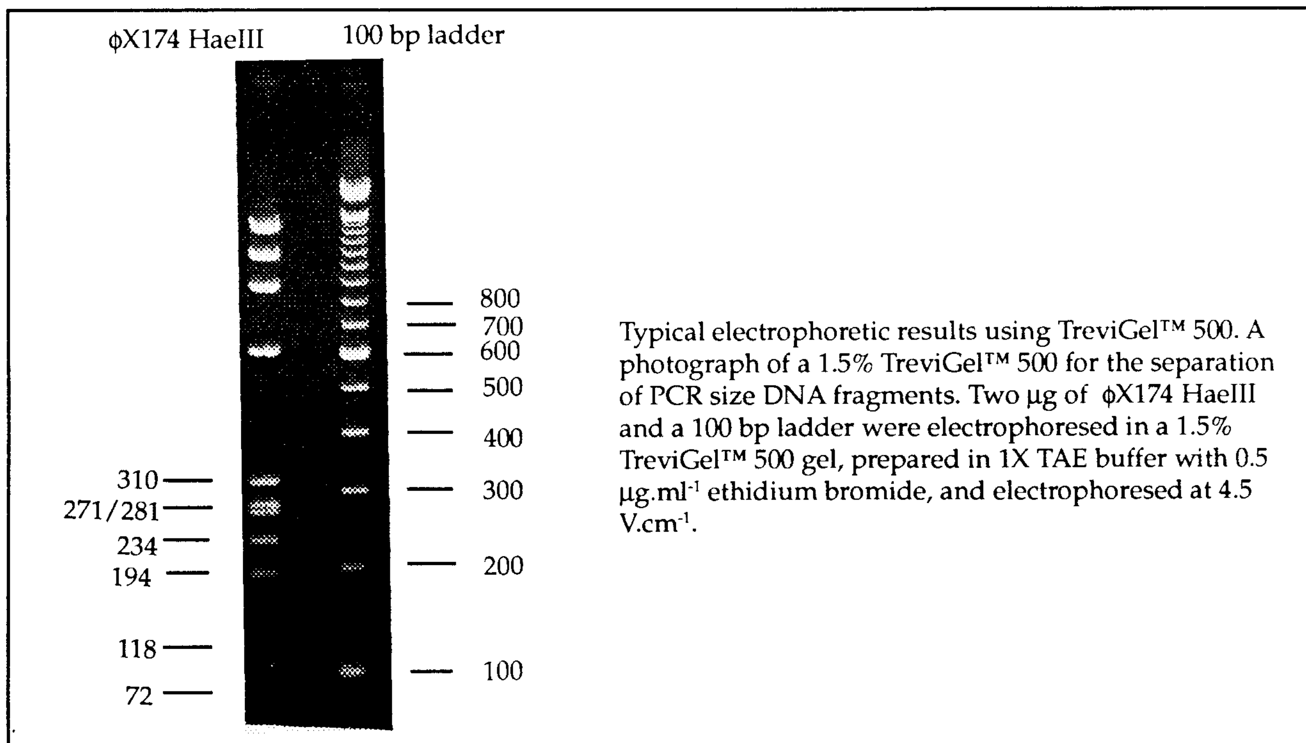
Southern Transfer Recommendations:

- These gels can be Capillary DNA transferred if the thickness of the gel is kept to 3 to 4 mm thick. The DNA can also be electrotransferred or vacuum blotted.

Not Recommended:

- Do not use TBE Buffer

- Loading buffers containing glycerol are not advised. Ficoll® containing loading buffers, such as Cat# 9850-250, are preferred.



Typical electrophoretic results using TreviGel™ 500. A photograph of a 1.5% TreviGel™ 500 for the separation of PCR size DNA fragments. Two μg of φX174 HaeIII and a 100 bp ladder were electrophoresed in a 1.5% TreviGel™ 500 gel, prepared in 1X TAE buffer with 0.5 $\mu g.ml^{-1}$ ethidium bromide, and electrophoresed at 4.5 $V.cm^{-1}$.

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