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SEQUENCING?

OUR ADVANCED NESTED SET TECHNOLOGY
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*and... it's easy to use because the bacteria does the work for you
by randomly inserting a transposon into the target DNA*

Intrigued? Ask us about our nested set service or TN1000 kit.

PROVEN PUBLISHED TECHNOLOGY: For large or small projects. TN1000 technology has been chosen over all other systems for use in the *Drosophila* genome project.

Experimental Protocol:

1. Clone your gene into the pMOB multiple cloning site, then transform bacterial host DPWC.
2. Add 100 uL of recombinant/DPWC and 100 uL recipient BW26 to 2mL prewarmed LB broth. Incubate for at least three hours. Spread on plates containing ampicillin and kanamycin.
3. Harvest colonies from the plate and analyze plasmids to determine the position of the transposon within the target gene.
4. Sequence DNA using supplied primers that prime from the fixed site region of the transposon.

MAJOR Advantages over other methods:

1. MINIMAL TECHNOLOGY TRANSFER. Investigators need only know how to clone and how to perform DNA minipreps. No enzymatic reactions are performed on the target DNA.
2. ONLY ONE NESTED SET IS REQUIRED FOR THE SEQUENCING OF BOTH STRANDS. For the TN1000 method, sequence is obtained from both strands of each clone. Methods using unidirectional deletions require two nested sets to sequence both strands.
3. EASE OF DNA PREPARATIONS. We recommend a quick boiling prep followed by conventional sequencing. No single strand preparations are necessary using our sequencing methods.



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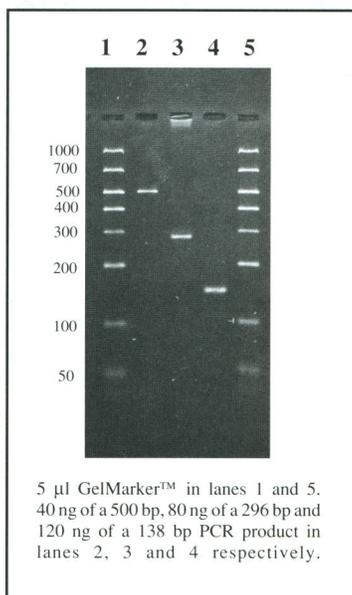
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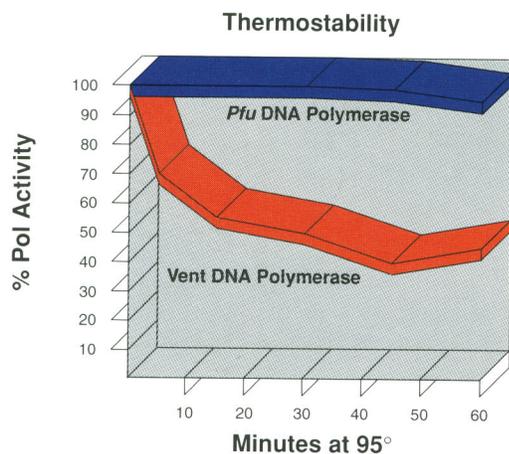


Figure 1: Thermostability of *Pfu* and Vent DNA Polymerases at 95°C.

To determine the thermostability of *Pfu* and Vent DNA polymerases at 95°C, 37.5 units of each enzyme were diluted to a final volume of 150 µl in the recommended reaction buffer and incubated at 95°C. At 0, 5, 15, 30, 45 and 60 minute time points, duplicated 10 µl aliquots (2.5 units) were assayed at 75°C for DNA polymerase activity.

* Patents Pending

** Vent™ is a trademark of New England Biolabs

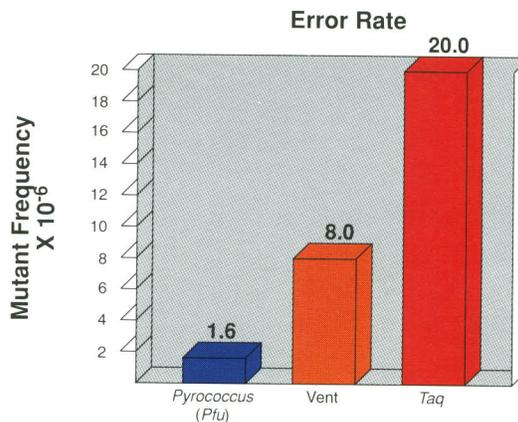


Figure 2: Polymerase fidelity was measured by modification of an assay described by Kohler *et al* (1991) *Pro. Natl. Acad. Sci. USA*, in press. Error rates reflect mutations per nucleotide incurred in the *lacI* gene during DNA synthesis. Vent is derived from *Thermococcus litoralis* and was obtained from New England Biolabs. *Pfu* is derived from *Pyrococcus furiosus* and is sold by Stratagene. *Taq* polymerase is derived from *Thermus aquaticus* and was obtained from Cetus Perkin Elmer.

Pyrococcus Polymerase	Catalog #
100 units	600135
500 units	600136

1. Bryant, F.O. and Adams, M.W.W. (1989) *J. Biol. Chem.* 264:5070-5079.
2. Fiala, G. and Stetter, K.O. (1986) *Arch Microbiol.* 145:56-61.
3. Eckert, K.A. and Kunkle, T.A. (1990) *Nucleic Acids Res.* 18:3739-3744.
4. Chien, A., Edgar, D.B. and Trela, J.M. (1976) *J. Bac.* 127:1550-1557.

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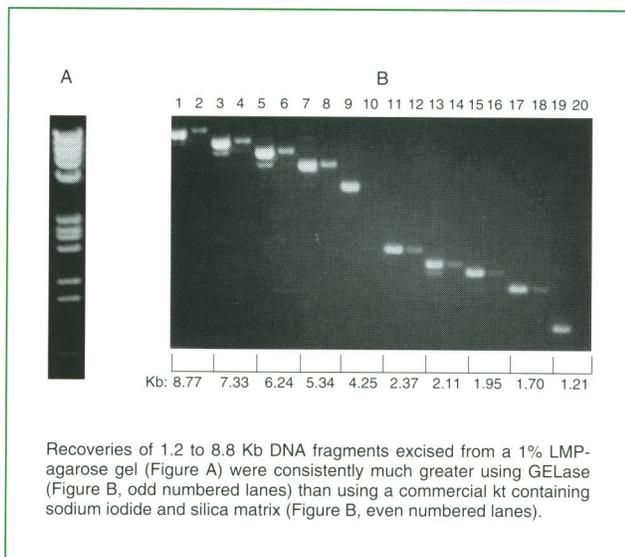
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"Here's why GELase™ may replace NaI/glass bead kits for purifying PCR products from LMP-agarose gels."

7 reasons that you can easily check for yourself...

1. Recovery of DNA is about 100% using GELase.

NaI/glass bead kits give about 50% recovery for 2–15 Kb DNA (see figure) and much less outside of that size range.



2. High molecular weight DNA, even megabase DNA, is not damaged using GELase.

DNA larger than 15 Kb is sheared using NaI/glass bead kits.

3. GELase is easy to use.

Just melt the gel slice with GELase Buffer, add GELase and incubate at 45°C to digest. To concentrate the DNA, add ethanol. The gel digestion products are soluble and won't precipitate with the DNA.

4. GELase is inexpensive.

One unit of GELase digests 600 mg of a 1% LMP-agarose gel in 1 hour in GELase Buffer. With a 10-hour incubation instead of 1 hour, the 200-unit size of GELase is enough to digest more than a KILOGRAM of a 1% gel.

5. DNA purified using GELase is ready to use and biologically active.

Some companies recommend two rounds of purification with a NaI/glass bead kit to obtain DNA for cloning. That's not necessary with GELase. DNA recovered using GELase is ready for use in restriction mapping, cloning, labeling, sequencing or other molecular biological experiments.

6. GELase is active in electrophoresis buffers.

It digests gels in TAE, TBE, MOPS and phosphate buffers. Special NaI/glass bead kits are needed for gels in TBE buffer.

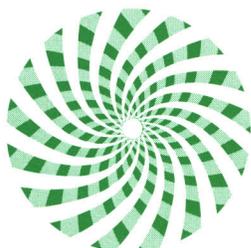
7. Protocols for using GELase are the same for RNA as for DNA.

GELase is RNase-free and active in MOPS or phosphate buffers that are used for RNA gels. In contrast, a special version of NaI/glass bead kit is needed for purification of RNA.

What is GELase?

GELase is a novel enzyme preparation that digests the carbohydrate backbone of agarose into small soluble oligo-saccharides, yielding a clear liquid that will not become viscous or gel even on cooling in an ice bath. It permits simple and quantitative recovery of intact DNA or RNA from low melting point (LMP) agarose gels. GELase contains no contaminating DNase, RNase or phosphatase.

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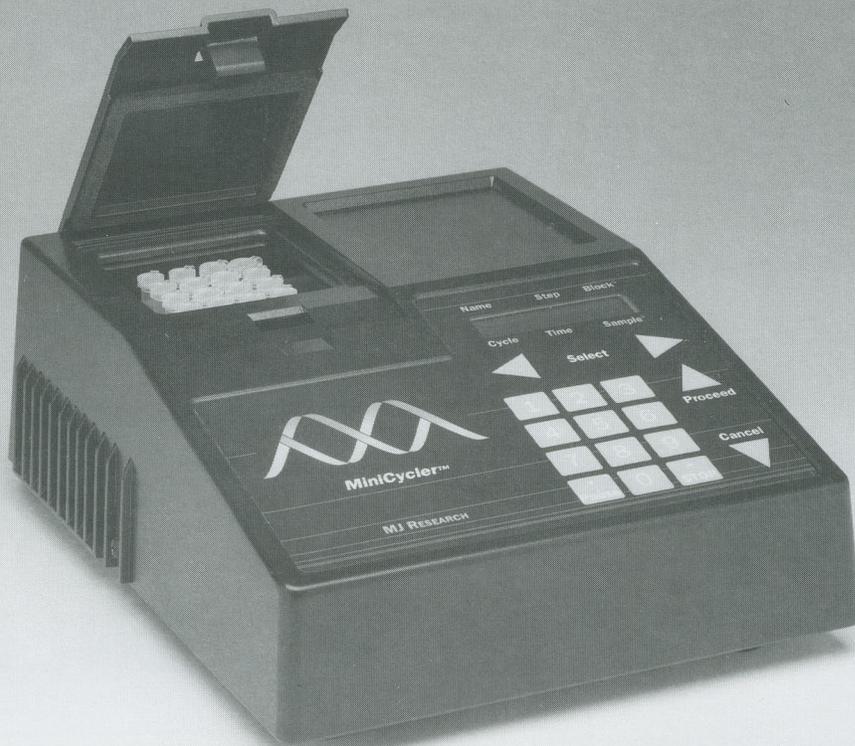
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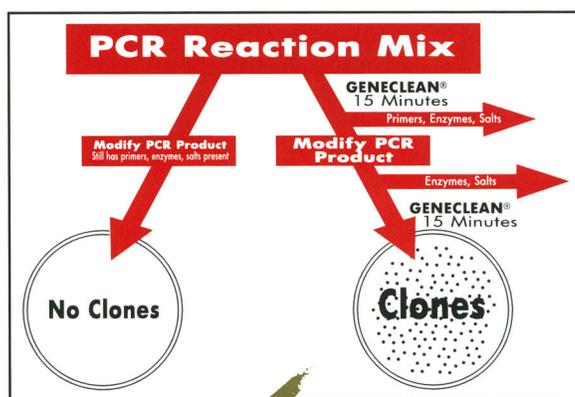
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3. Aslanidis, C. and de Jong, P. J. (1990) Nucleic Acids Res. 18, 6069
4. Starr, L. and Quaranta, V. (1991) In preparation

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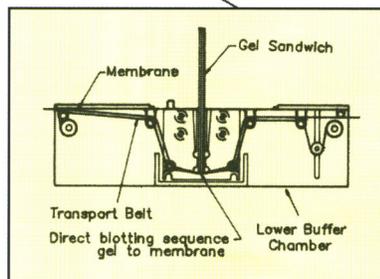
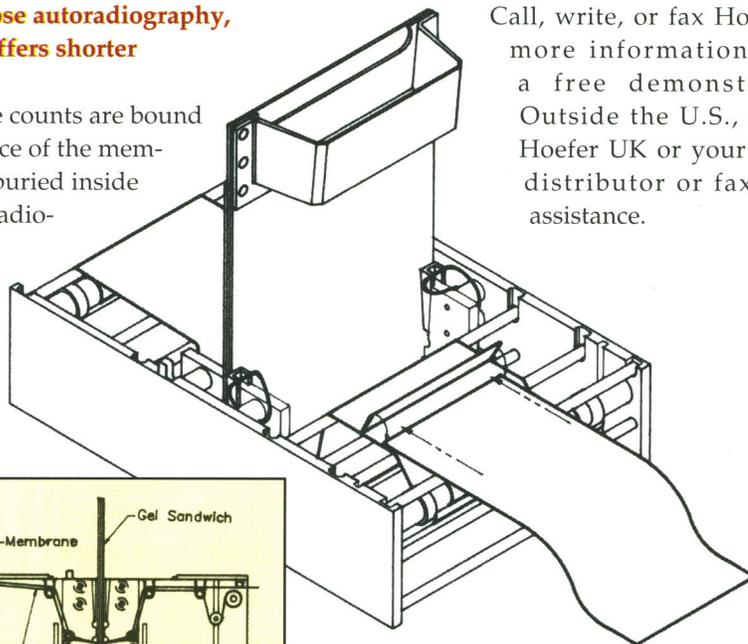
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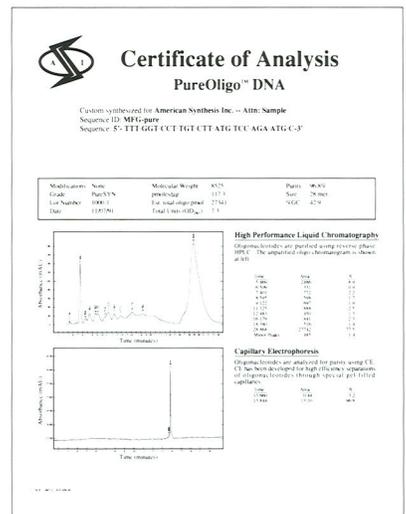
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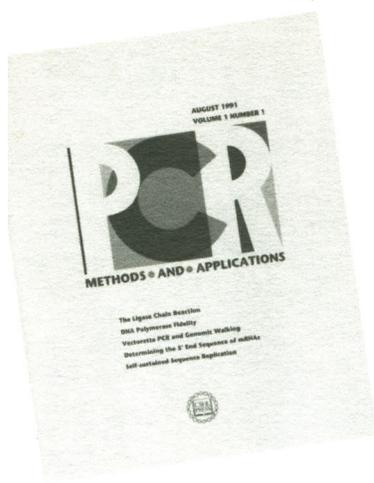
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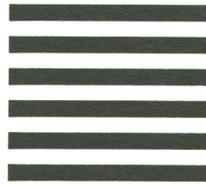


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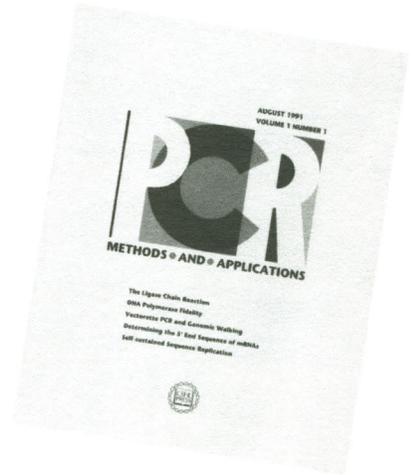
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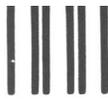
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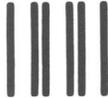
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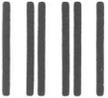
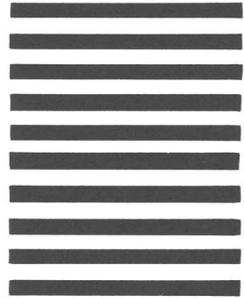
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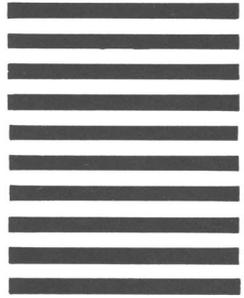
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