Quality and Stability of DNA Ladders Shipped at Ambient Temperature

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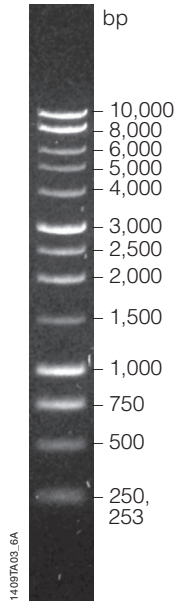

BenchTop 1kb DNA Ladder (Cat.# G7541)

Introduction

We are committed to preserving and improving the natural environment by focusing on a long-term view of what is needed to thrive for the next 100 years and beyond. One of the initial steps in that process is the reducing the amount of dry ice or cold gel used for shipping reagents.

Due to demonstrated stability of DNA, we decided to evaluate the need for any added refrigerant during shipping of several DNA markers. By removing gel or dry ice for these shipments, we will eliminate the need for 17,000 kilograms of dry ice a year.

In this paper, we describe how each DNA ladder (Table 1) was evaluated by an outside testing lab (Gaynes Lab Incorporated) and Promega under simulated shipping conditions. To replicate temperatures experienced during shipping samples, we followed recommendations outlined in ISTA 7D (Figure 1). All testing was conducted in standard Promega corrugated fiberboard boxes. Functional gel analysis was accomplished using inventory material stored at recommended conditions. Fill volume evaporation tests were also carried out and compared to inventory controls.

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Materials and Methods

Samples

Table 1. DNA Markers Evaluated at Gaynes Lab Inc.

Cat.#	Product
G2101	100bp DNA Ladder
G5711	1kb DNA Ladder
G7511	BenchTop ΦX174 DNA/HaeIII Markers
G7521	BenchTop pGEM® DNA Markers
G7531	BenchTop PCR Markers
G7541	BenchTop 1kb DNA Ladder
G8291	BenchTop 100bp DNA Ladder

ISTA 7D Testing Method

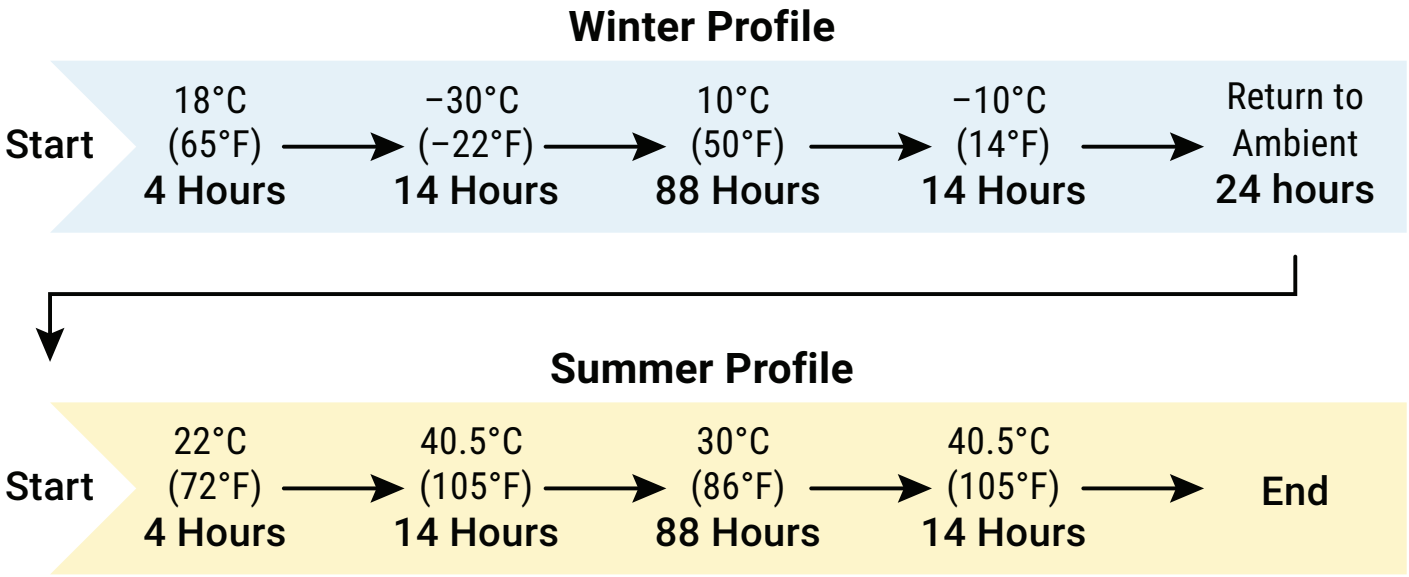

Figure 1. Temperature and time cycles used at the Gaynes Lab for ambient testing of DNA markers.

Additional Internal Testing

In addition to the markers noted in Table 1, testing was conducted on several additional DNA markers by Promega. This testing consisted of samples being exposed to 37°C for 120 hours. Fill volume evaporation and gel analysis were conducted and compared to controls.

Results and Discussion

In both studies, evaporation analysis results showed no significant loss of material. Sample gel results were consistent with inventory samples stored at recommended storage conditions (Figure 2).

For additional information regarding individual DNA markers, please contact Promega Technical Services.

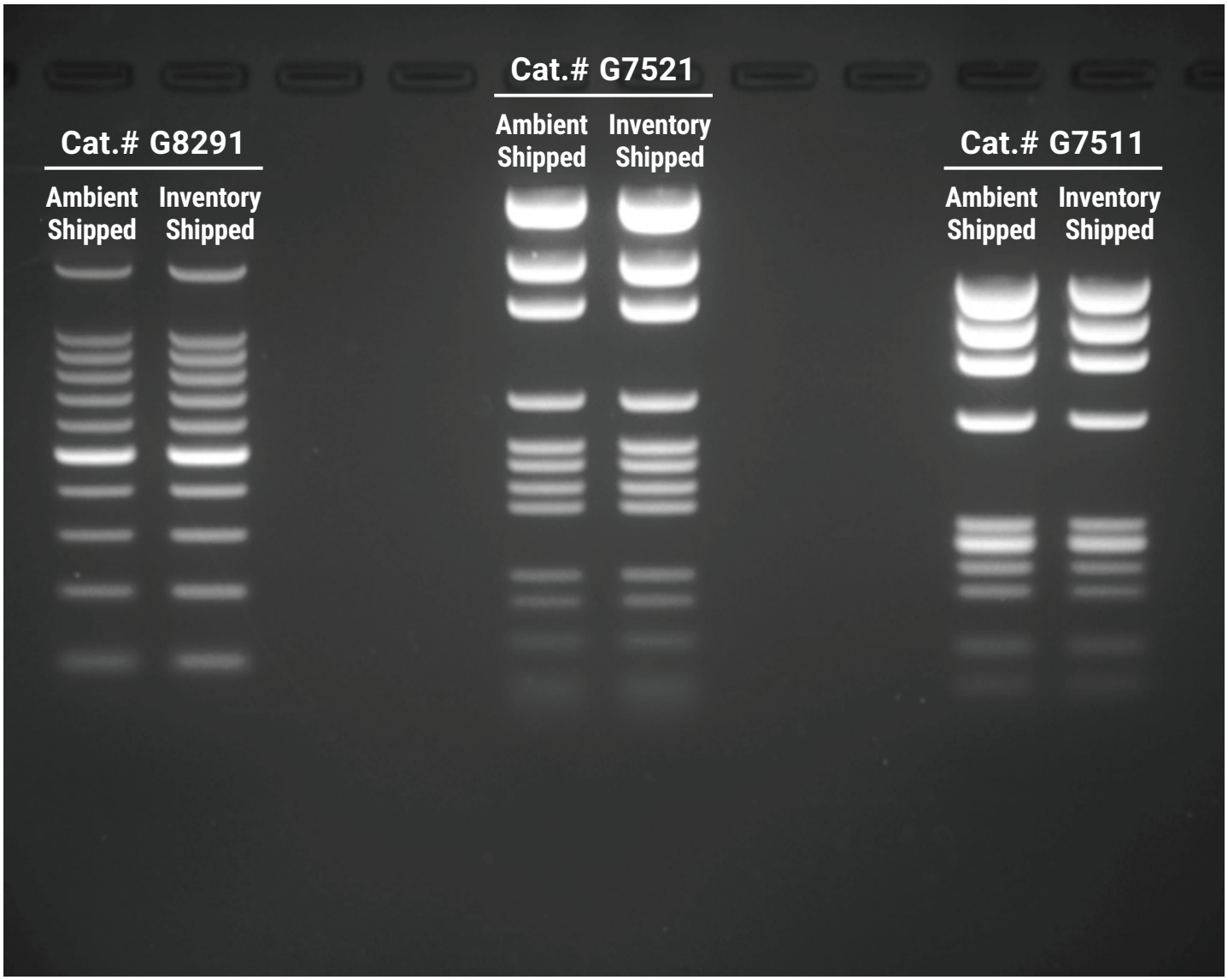

Figure 2. Comparison of samples loaded on a 2% agarose gel at 80 Volts for 3 hours. Lanes from left to right: BenchTop 100bp DNA Ladder (Cat.# G8291), BenchTop pGEM® DNA Markers (Cat.# G7521) and BenchTop ΦX174 DNA/HaeIII Markers (Cat.# G7511).