

## Technical Note

### GenTegra<sup>®</sup>-DNA Sample Kit Technical Evaluation Plan

#### GenTegra-DNA

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#### Overview

This technical evaluation plan can be used as a guide for accelerated stability testing using GenTegra DNA tubes.

#### Kit Contents

The GenTegra DNA Sample Kit contains the following items:

- Three GenTegra DNA 0.5 ml screw cap tubes

#### Before You Begin

1. Download a copy of the GenTegra DNA user manual at [www.gentegra.com](http://www.gentegra.com)
2. Select a DNA sample to use for evaluation.
  - For best results, quantitate the DNA sample and run on a gel to check quality before you apply to GenTegra Tubes .
  - GenTegra DNA tubes can accommodate between 50 ng-25 µg of DNA in a volume of 20-250µL.
3. Prepare four aliquots of your sample, three applied to GenTegra DNA tubes and one stored frozen as a control in your typical tube.
4. Choose an accelerated\* testing program, depending the amount of time available for evaluation and need for long- term stability data.

#### Programs

##### Program 1: One week evaluation

- Aliquot 1 - GenTegra tube, one week at room temperature (25°C)
- Aliquot 2 - GenTegra tube, one week at 56°C (equivalent to 8 weeks at 25 °C)
- Aliquot 3 - GenTegra tube, one week at 76°C (equivalent to 32 weeks at 25 °C)
- Aliquot 4 - Frozen control, one week at -20°C

##### Program 2: Two week evaluation

- Aliquot 1 - GenTegra tube, two weeks at room temperature (25°C)
- Aliquot 2 - GenTegra tube, two weeks at 56°C (equivalent to 16 weeks at 25 °C)
- Aliquot 3 - GenTegra tube, two weeks at 76°C (equivalent to 64 weeks at 25 °C)
- Aliquot 4 - Frozen control, two weeks at -20°C

##### Program 3: One month evaluation

- Aliquot 1 - GenTegra tube, one month at room temperature (25°C)
- Aliquot 2 - GenTegra tube, one month at 56°C (equivalent to 8 months at 25 °C)
- Aliquot 3 - GenTegra tube, one month at 76°C (equivalent to 32 months at 25 °C)
- Aliquot 4 - Frozen control, one month at -20°C

## Accelerated Stability Formulas

\* Accelerated stability formulas are based on temperature dependence of rate-limiting oxidative damage. GenTegra stores DNA samples at up to 76°C to demonstrate long term stability.

- 1 day at 37°C is equal to two days at 25 °C
- 1 day at 56°C is equal to eight days at 25 °C
- 1 day at 76°C is equal to 32 days at 25 °C

## References

- *Nucleic Acids Research* (2002) 30:1354-1363
- *Nature* (1993) 362:709.715

## Technical Evaluation

1. Apply DNA to GenTegra tubes and dry according to the protocol described in the user manual.
2. Store DNA at indicated temperatures for appropriate length of time.  
Room temperature samples may be left on your bench top.
3. Elevated temperature studies should be conducted using dry ovens set at the appropriate temperatures.
4. Following the storage period, recover DNA according to the protocol described in the user manual and use for downstream analysis.

## Downstream Analysis

1. Remove your control aliquot from the freezer and run alongside the samples recovered from GenTegra in each type of analysis.
2. Quantitate your DNA and run on a gel to assess yield and integrity.
3. Use recovered DNA for a downstream application of your choice to assess quality and purity.

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