

GenTegra™

GenTegra™ DNA

A “bone dry” inert mineral medium with built in oxidation protection and antimicrobial activity for room temperature storage of purified DNA in ready to use aliquots, and water soluble for direct downstream molecular analyses.

Preserves DNA Integrity in a Bone-dry Environment

GenTegra™ DNA’s water-free environment ensures protection of DNA from degradation over a long period of storage at room temperature. When air-dried in a chemical medium with low water content such as GenTegra, DNA becomes much more stable at room temperature. DNA is a chemical polymer that is unstable in the presence of water¹. DNA in a bone-dry environment, is less exposed to risks of DNA strand breakage resulting from hydrolysis. In addition, in such an environment the rate of ultraviolet light damage is diminished, as first noticed in the unusual stability of DNA in air-dried seeds². In an air-dried state at less than 70% relative humidity, DNA takes a coiled structure that is incompatible with ordinary UV-light induced thymidine dimer formation³, or other water aided process that promotes UV-light photo-damage. The cluster tube format of GenTegra™ also provides thermal stability for DNA samples even at elevated temperatures.



Features and Benefits

- Supports the most demanding molecular assays
- Compatible with existing equipments, methods, and protocols for analysis and quantitation
- DNA easily recovered for immediate use without purification
- DNA integrity maintained over a long period of time
- 96 cluster tube ready-to-use format for easy and efficient sample storage, transport and sharing
- Environmentally friendly and saves energy, space, and labor

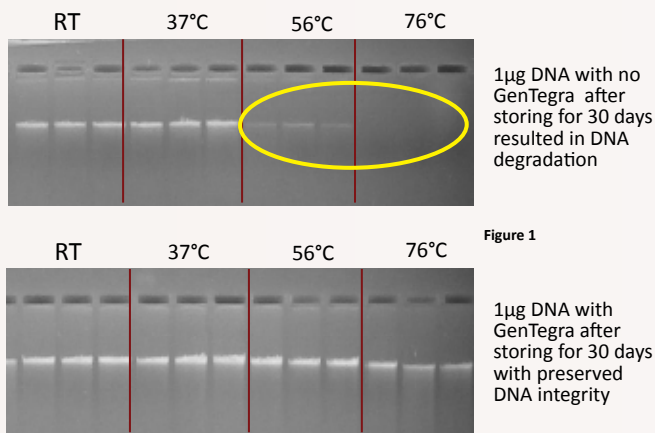


Figure 1. **Preserving DNA integrity with GenTegra.** Studies confirm effective preservation of DNA integrity stored in GenTegra than in an empty tube. Without matrix the samples began to degrade after 30 days of accelerated studies. DNA stored with GenTegra matrix does not show any degradation even at 32x accelerated studies with samples prepared in multiple buffers.

Flexibility in Sample Handling and Storage

GenTegra™ DNA comes in 96 cluster tubes ready-to-use for storing purified DNA samples from 0.25µg to 5µg aliquots. This enables easy transport and sample sharing among research or study collaborators. These cluster tubes are available in barcoded racks as well as individually barcoded tubes for easy tracking and inventory management. Recovery of DNA for downstream application is as simple as taking an aliquot out of a freezer. Simply rehydrate and your DNA sample is ready for downstream applications such as PCR, microarray analysis, genotyping and sequencing.

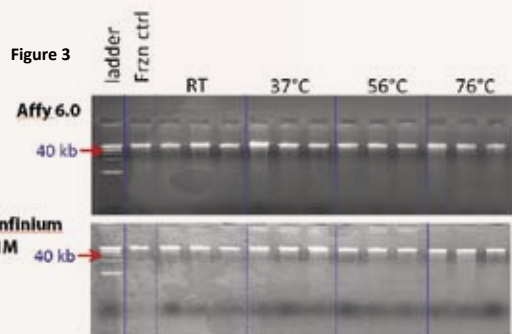
Excellent DNA Recovery

DNA may be quantitatively recovered from GenTegra™ DNA tubes with great confidence. No post storage purification is required prior to assay application, thus providing researchers with an excellent DNA recovery rate of almost 100%. GenTegra DNA is robust and compatible with a DNA samples prepared or assayed in a wide range of buffers.



Confidence in Analysis Results

GenTegra™ DNA is inert and will not interfere in post storage application assays such as PCR, genotyping, and spectrophotometric quantitation. This makes it very easy for GenTegra™ to be integrated in existing equipment, methods, and protocols for analysis, quantitation, and purity determination. Validation studies also indicated that GenTegra integrity and recovery is comparable to samples analyzed from cryopreserved samples (Figure 3).



		Frozen Control	GenTegra RT	GenTegra 56°C	GenTegra 76°C
Call Rate	Affy 6.0	99.50%	99.40%	98.70%	99.20%
	Infinium 1M	99.80%	99.70%	99.80%	99.70%
Concordance	Affy 6.0		99.80%	97.70%	99.70%
	Infinium 1M		99.90%	99.90%	99.90%

Figure 3. Identical Genotyping Results to Frozen Samples. Table indicates Call rates and concordances from Affymetrix 6.0 chips and Illumina 1M Duo chips on the Infinium platform were as good as frozen DNA

Figure 4a. Uncompromised quantitation and assessment of DNA purity. GenTegra's inert matrix does not interfere with the DNA sample absorbance curve in the 260-280 nm range. It is easy to determine the concentration and A260/280 ratio of DNA samples stored in GenTegra DNA Tubes, and blanking with the GenTegra matrix is not required prior to quantitation.

Figure 4a

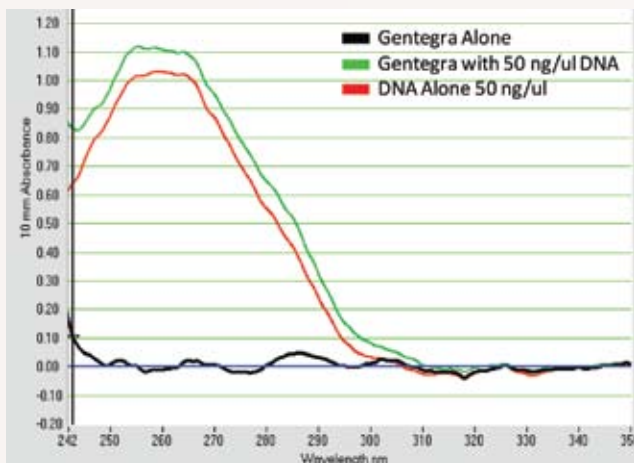


Figure 4b

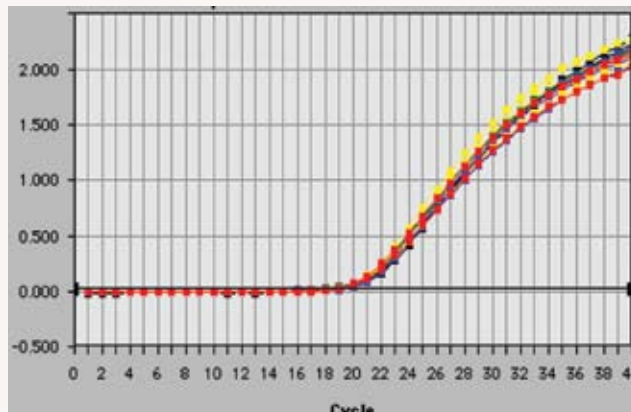


Figure 4b. Successful QPCR amplification of DNA stored in GenTegra™ DNA Tubes. No PCR inhibition was observed in quantitative real-time PCR even when 26% of the reaction volume was made up of DNA (Black – DNA stored at -20°C; red, green, yellow – DNA stored in GenTegra™ DNA tubes).

Product Specifications

Product Format:	0.3 ml Cluster Tubes
Dimensions Cluster Tubes:	Tube height: 20.5mm Tube top diameter: 8.46mm Tube bottom dia.: 6.35mm
Dimensions Tube Racks:	Length: 127.76mm Width: 85.48
Application Volume:	10-20 µL
Application Amount:	0.25µg to 5.0µg
Recovery Volume:	20 uL (50µg for 5µg sample)
Drying Time:	Overnight
Recovery :	99.9%
DNA Long Term Storage:	7 years accelerated and counting

References/Footnotes

- Komigama, M., Takeda, N. & Shigekawa, H. Hydrolysis of DNA and RNA by lanthanide ions: mechanistic studies leading to new applications. Chem. Comm. 1999, 1443–1451 (1999).
- Vanhee, L.M., Nelis, H.J. & Coenye, T. Enumeration of airborne bacteria and fungi using solid phase cytometry. J. Microbiol. Methods 72, 12–19 (2008).
- Lamola, A.A. & Mittal, J.P. Solution photochemistry of thymine and uracil. Science 154, 1560–1561 (1966).

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