

GenTegraDNA™ in the Forensics Lab



GenTegraDNA for Long Term storage

All forensic cases require DNA samples to remain intact for future testing. Studies were completed that confirm GenTegraDNA prevents degradation over long-term storage at ambient temperatures and samples remain intact for downstream applications and analysis. While freezing is the traditional standard for long-term storage of extracted DNA, long-term freezer storage comes with inherent challenges, including sample loss through repeated freeze-thaw cycles, adherence to the tubes, and evaporation and degradation. When DNA samples are dried in GenTegraDNA, they are ready for decades of storage at room temperature or for shipping at ambient temperatures thereby removing the burden of dry-ice. GenTegraDNA coats the DNA with a protective layer that prevents damage to the DNA. Recovering your DNA sample after storage or shipping is easy: Simply add water to recover the DNA and the DNA is immediately ready for downstream analysis.

The Solution for Long-Term DNA Storage: Active Chemical Protection™

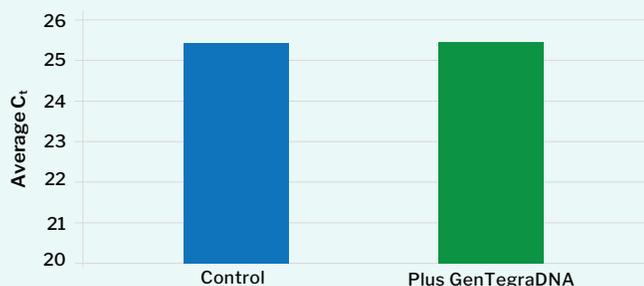
GenTegraDNA is a robust and reliable dry storage protection product that utilizes GenTegra's proven, patented Active Chemical Protection™ to protect DNA from hydrolysis and exposure to oxidation, and allows for higher recovery rates. GenTegraDNA provides protection even in the presence of extreme temperature conditions (-80 °C to +72 °C). An additional benefit, samples stored or shipped in GenTegraDNA do not require special humidity control.

Avoid hassles and risks of freezer storage

Everyone knows that freezer storage works and keeps samples stable, however, we have gotten accustomed to overlooking the daily hassles of using freezer storage. First and foremost is the risk that at any moment the freezer can fail due to mechanical issues or because the power grid fails. Also, accessing a specific sample is not straight forward as over time they all become covered in frost making identification of the desired sample difficult. You not only reduce risks and hassles, but you are also adopting a GREEN technology by using GenTegraDNA rather than freezer storage.

Downstream applications supported:

- Short Tandem Repeats, **STR**
- Next Generation Sequencing, **NGS**
- Quantitative PCR, **qPCR**
- Sample concentration

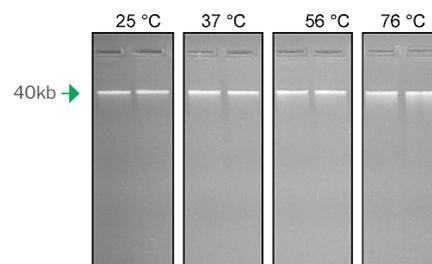


GenTegraDNA does not inhibit qPCR amplification.

C_t values showed normal amplification with GenTegraDNA-protected samples compared to unprotected samples without GenTegraDNA.

DNA samples stored on GenTegraDNA show no degradation.

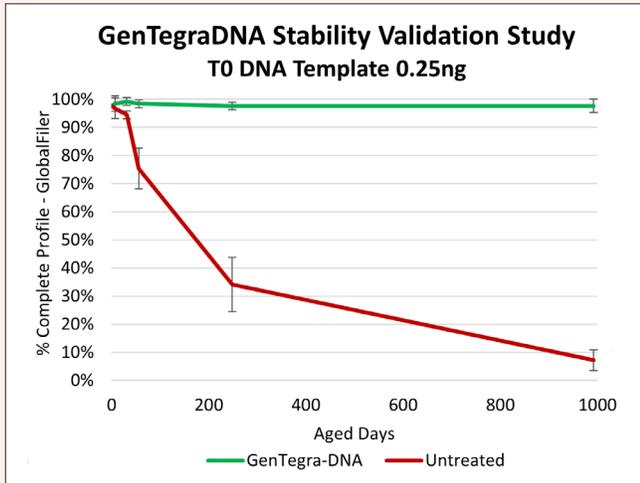
Accelerated stability studies show DNA sample protection with no visible degradation after the equivalent of 20 years storage at ambient temperature.



Easy concentration of forensic samples

When using GenTegraDNA, the drying and rehydration steps make altering the sample concentration easy, without any additional steps. If the original sample of 75µL is dried and then rehydrated in 25µL, the sample is then 3 times

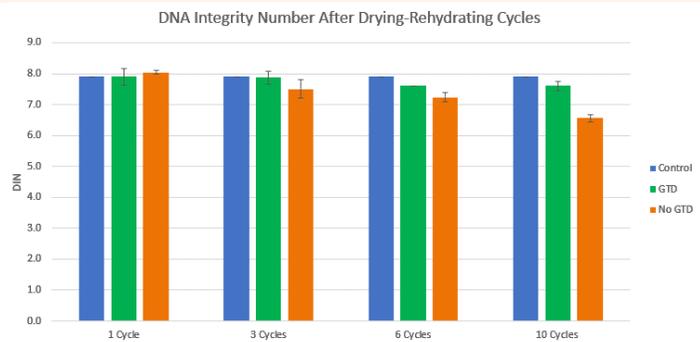
its original concentration. No sample loss, no guessing of how much water you have removed, and no inhibition of downstream applications!



Accelerated time study of low level DNA. Comparing 0.25ng samples of purified DNA protected with GenTegraDNA and unprotected. Time acceleration was done using the Arrhenius equation and elevated temperatures. In approximately 2.7 years of storage as much as 90% of the unprotected DNA is damaged while the GenTegraDNA protect samples are unchanged.

This data kindly provided by Bode Technology.

DNA integrity number (DIN) for DNA samples protected with GenTegraDNA and without GenTegraDNA after one, three, six and ten cycles of drying-rehydrating the samples. The control is a DNA sample from the same source kept at -20°C. Samples protected with GenTegraDNA maintain a higher DIN, comparable to the controls. Samples without GenTegraDNA exhibit a consistent decrease in DIN from three cycles, which decreases further after six and ten cycles.



Product Specification	Description
Total DNA application amount	0.00 µg - ≤20 µg
Sample application volume	20-100 µL typical range
Recovery volume	Equals application volume (20 - 100 µL of molecular biology water) Concentrating sample supported by using less than original volume
Stability for transport	Tolerance for extreme temperatures and extreme temperature shifts (-80 °C to 76 °C) Exceeds Military specifications (-60 °C to 71°C) Exceeds Federal Express® specifications (-51 °C to 60 °C)
Shelf life	3 years (prior to use)
Drying method and time	FastDryer™: Overnight SpeedVac®: 2 - 4 hours, depending on volume/type of SpeedVac Under Biosafety Hood: 14 hours
Recovery	>95%

Stabilize in GenTegra DNA and dry

Store or transport at ambient temperature

Recover and concentrate by adding water and use in application