

DNAgard[®] Saliva HT: DNA yield from saliva samples

INTRODUCTION

Salivary DNA is becoming increasingly popular for genetic analysis because saliva collection is painless and non-invasive. DNAgard[®] Saliva HT is designed for safe collection and automated processing of salivary DNA samples. This technical bulletin provides evidence that the stabilizing chemistry in DNAgard[®] Saliva HT preserves salivary DNA integrity for at least one (1) month after sample collection.

MATERIALS AND METHODS

Saliva Collection and Storage

Saliva samples from twenty-five (25) donors were collected into conical tubes. Samples from each individual donor were transferred into DNAgard[®] Saliva HT stabilizer (DGS-HT) or Competitor O's (CO) stabilizer at a 1:1 (vol:vol) ratio and mixed. DGS-HT samples were stored at 25°C for up to one (1) month.

DNA Purification

200 µL aliquots of each sample were removed and processed on a MagNA Pure Compact Instrument using a MagNA Pure Compact Nucleic Acid Isolation Kit I (Roche, Cat. No. 03730964001) according to the manufacturer's instructions. Samples were eluted in 100 µL of Elution Buffer.

DNA Yield and Purity

The purified DNA was quantified using a Quant-iT[™] PicoGreen[®] dsDNA Assay kit (Thermo, Cat. No. P7589), and the purity evaluated by measuring the A_{260}/A_{280} absorbances using a Take3 microplate reader (Biotek).

RESULTS

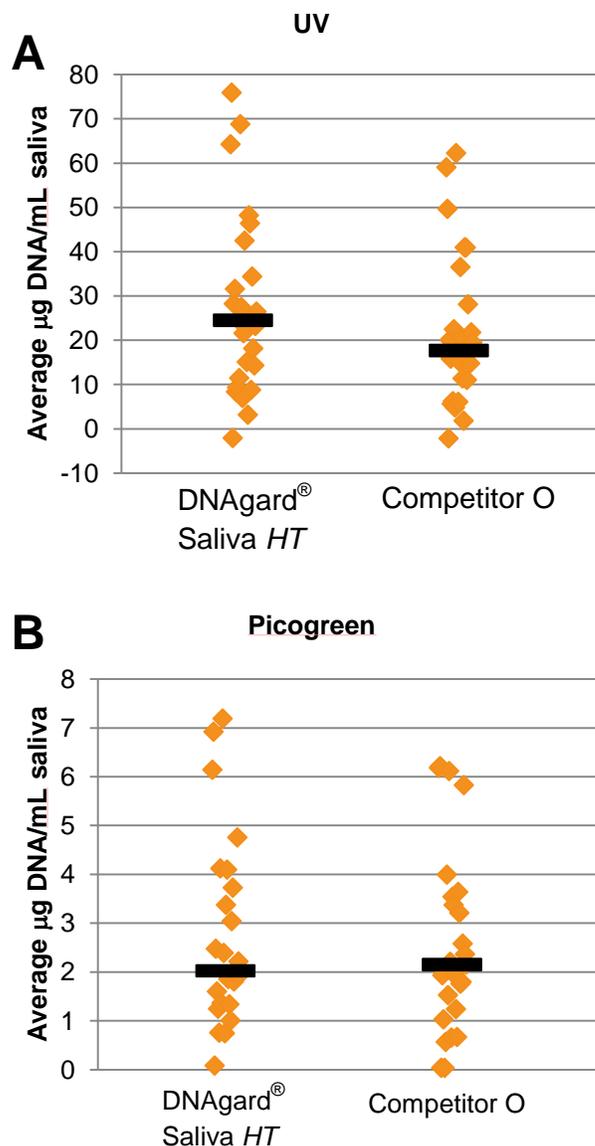


Figure 1: Yield of dsDNA isolated from saliva using DNAgard[®] Saliva HT and Competitor O. DNA concentration was measured immediately after collection using (A) UV absorbance or (B) Quant-iT[™] PicoGreen[®] dsDNA Assay immediately after collection. Black bars indicate median yields.

Collection Method	Median DNA yield (µg)/ml of saliva (UV)	Median DNA yield (µg)/ml of saliva (Picogreen)	Median DNA Purity (A_{260}/A_{280})
DNAgard [®] Saliva HT	24.5	2.02	1.58
Competitor O	17.7	2.15	1.54

Table 1: Summary of DNA yield and purity results using DNAgard[®] Saliva HT or Competitor O following purification of samples.

SUMMARY

Samples purified after storage in DNAgard[®] Saliva HT exhibit dsDNA yield and purity comparable to samples stored in Competitor O's stabilizer (Figure 1, Table 1). Studies of saliva samples stored in DNAgard[®] Saliva HT indicate that the dsDNA in the saliva-stabilizer mixtures remains secure for at least 1 month at room temperature (Figure 2). The results also indicate that UV absorbance, while correlating with yield, should not be used to substitute for a direct measure of dsDNA yield, such as fluorescence. Taken together, these results demonstrate that DNAgard[®] Saliva HT can be used for the collection, shipping, storage, and recovery of dsDNA from saliva samples at ambient temperatures.

For Research Use Only. Not for use in diagnostic procedures.

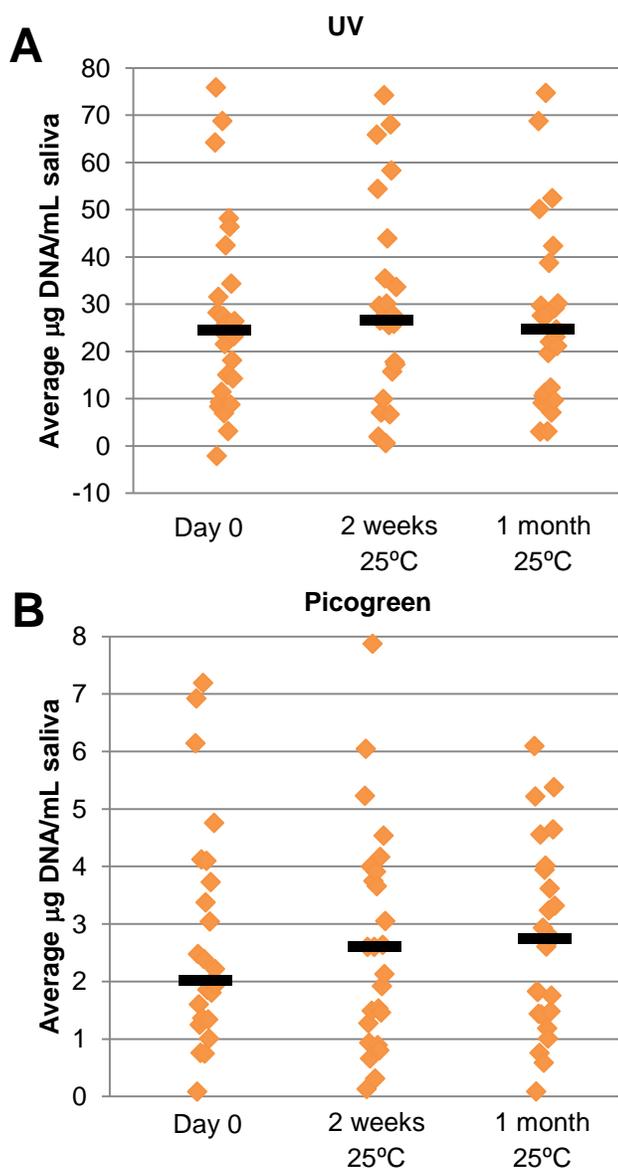


Figure 2: Yield of dsDNA isolated from saliva stored using DNAgard[®] Saliva HT. DNA concentration was measured using (A) UV absorbance or (B) Quant-iT[™] PicoGreen[®] dsDNA Assay immediately after collection, after 14 days, and after one month of storage at 25°C. Black bars indicate median yields.