The Range of DNA Yield with Norgen's Saliva DNA Collection,Preservation and Isolation Kit

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INTRODUCTION

In recent years attention has been turning to the use of non-invasive samples for genetic and diagnostic analysis, including the use of saliva. In contrast to blood samples, saliva can be self-collected, is less costly to ship and easier to store and process. Human genomic DNA extracted from buccal epithelial cells and white blood cells found in saliva can be used in various applications including diagnostic assays, epidemiological studies and surveys. The isolation of high quality DNA from saliva is not without its problems however. The number of DNA-containing cells found in saliva can vary significantly from individual to individual. Adequate amounts of saliva must therefore be collected to ensure that DNA can be extracted in an amount sufficient for testing. This application note reports on the amount of DNA obtained from saliva using Norgen's Saliva DNA Collection and Preservation Devices (Cat. RU49000) and Norgen's Saliva DNA Isolation Kit (Cat. RU45400).

METHODS AND MATERIALS

DNA Isolation

Sixty different saliva samples were collected using Norgen's Saliva DNA Collection and Preservation Devices (Cat. RU49000) and DNA was purified according to the supplied protocol for Norgen's Saliva DNA Isolation Kit (Cat. RU45400). An additional 50°C rehydration step was carried out for one hour in order to obtain an accurate DNA concentration.

Determination of DNA Yield

DNA yield was determined using a NanoVue PlusTM (GE Healthcare) according to the manufacturer's instructions.

RESULTS AND DISCUSSION

The amount of DNA recovered from saliva samples can vary greatly depending on the collection method, preservation method and isolation method. A high yield of DNA is often required for certain downstream applications. Here, DNA was collected using Norgen's Saliva DNA Collection and Preservation Devices (Cat. RU49000) and isolated from 60 saliva samples using Norgen's Saliva DNA Isolation Kit (Cat. RU45400), and the yield from each sample was determined using a NanoVue Plus™. The total DNA yield of Norgen's saliva samples from 60 donors is shown in Figure 1. The DNA yield was between 2 µg to 115 µg from 0.5 mL preserved saliva samples stored at an ambient temperature for 1 day. Average DNA yield was 14.6 µg and 60% of the samples had total DNA yields between 3 µg to 12 µg.

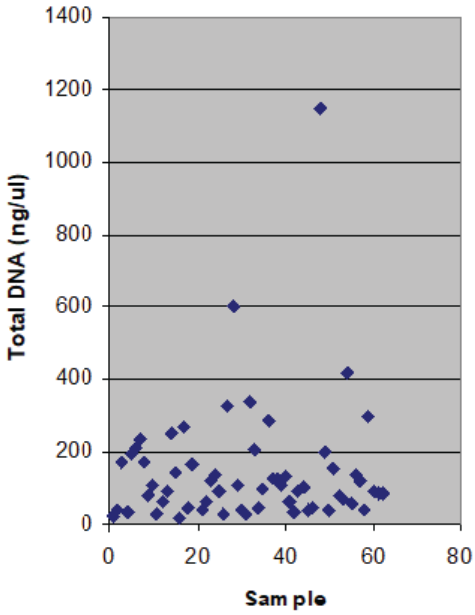

Figure 1. Scattergram of DNA yield from 60 donors isolated using Norgen's Saliva DNA Isolation kit (Cat. RU45400).

CONCLUSIONS

The results demonstrate that the saliva DNA isolated using Norgen's Saliva DNA Isolation Kit (Cat. RU45400) is of a high yield. Norgen's Saliva DNA Collection and Preservation Devices (Cat. RU49000) offer a non-invasive method for the collection of saliva samples for use in diagnostic studies. The average DNA yield was 14.6 µg, an amount which is higher than many other oral collection methods.

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Saliva DNA Collection and Preservation Devices (50)	50 Devices	RU49000
Saliva DNA Isolation Kit	50 Preps	RU45400

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