

DNA Preserved for 3 Months using NEW Isohelix™ RapiDri Integrated Swab Kit

As demand for DNA increases in research, medicine, & consumer genomics, so too does the need for a reliable, cost-effective method of collection & transport of samples. The NEW Isohelix™ RapiDri Integrated Swab Kit provides this with an all-in-one method of sample collection, stabilisation, & transport. This note aims to demonstrate the effectiveness of RapiDri stability over a three month period.

Methods & Materials:

Swab samples were collected from multiple individuals using Isohelix RapiDri swabs. Following collection a set was immediately frozen at -20°C and stored for one month. The remaining sets of swabs were placed into RapiDri storage pouches, which were then stored at room temperature (23°C) for different time periods at varying humidity; one set was stored for 7 days, another for 1 month, with a third set stored for 3 months.

Following their respective storage periods, swab samples were then purified using the Isohelix Buccal-Prep Plus DNA Isolation Kit (BPP-50), with a final elution volume of 100µl. DNA yield from samples were determined by Qubit assay, purity by Nanodrop, and DNA integrity by 1.0% agarose gel electrophoresis. The collected data were then averaged and analysed.

Results:

| | Mean Results | | | |
|----------------------------------|----------------|---------------|----------------|-----------------|
| | Frozen (-20°C) | 7 Days (23°C) | 1 Month (23°C) | 3 Months (23°C) |
| DNA Concentration (ng/µl) | 39.39 | 35.05 | 38.79 | 42.43 |
| Total DNA Yield (µg) | 3.94* | 3.51* | 3.88* | 4.24* |
| A260/280 | 1.83 | 1.92 | 1.84 | 1.85 |
| A260/230 | 1.80 | 1.77 | 1.83 | 1.51 |

Table 1: Mean data of yield & purity of RapiDri samples stored from 7 days to 3 months at 23°C, compared with frozen swabs at -20°C stored for 1 month.

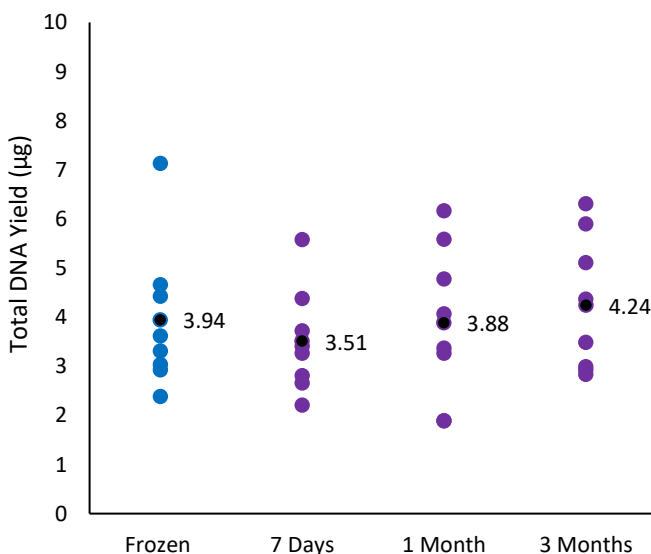


Figure 1: Scatter plot of total DNA yields of samples collected from each set, with mean total yield (in µg).

- DNA samples collected and stored using RapiDri maintain a high yield over a three month period compared to swabs frozen at -20°C.

*Note: Yield from buccal swabs will naturally vary between donors. However, RapiDri ensures consistent collection of DNA, with expected yields ranging from 2-5µg.

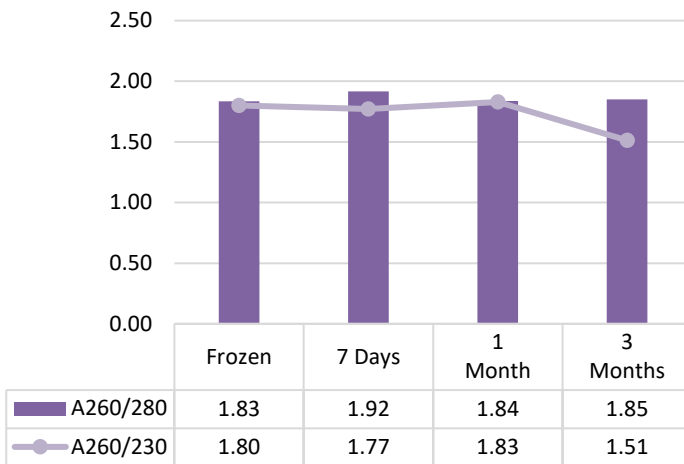


Figure 2: Chart displaying mean A260/280 & A260/230 ratios of samples collected using RapiDri, compared to frozen swabs.

- Purity of samples isolated from RapiDri swabs are maintained over the three month period and are similar to frozen samples, with A260/280's >1.7 & A260/230's >1.5 throughout.

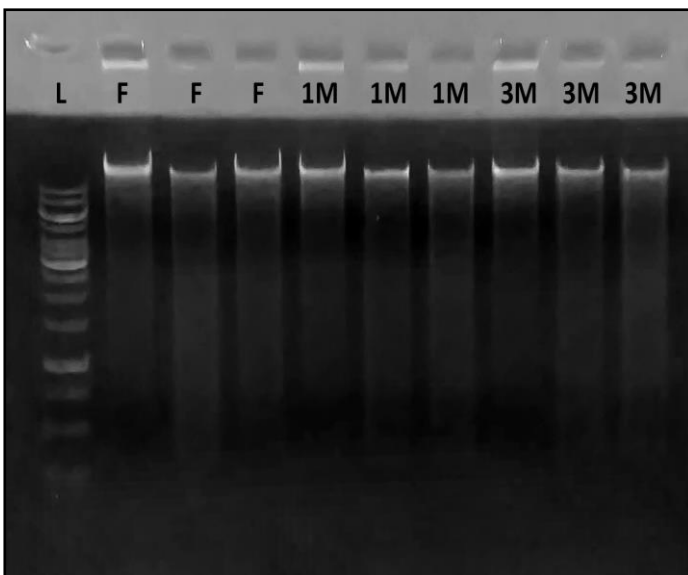


Figure 3: 1.0% agarose gel analysis of DNA integrity from samples collected using RapiDri; comparing Frozen (F) swabs to 1 Month (1M) & 3 Month (3M) RapiDri samples.

- Gel data indicates that samples stabilised by RapiDri maintain their integrity over three months with minimal degradation, comparable to frozen swabs.

Conclusions:

- **NEW Isohelix™ RapiDri Integrated Swab Kit is a cost-effective method for short-term collection and stabilisation of buccal DNA samples, with yield and purity comparable to freezing. Samples remain stable from donor to laboratory.**
- **RapiDri uses a novel dry stabilisation technology, with no liquid handling required before purification. No risk of sample losses due to spillage.**
- **Samples stored using RapiDri are stable at ambient temperatures and variable humidities, and are easy to transport, and are ideal for postage.**