

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™ Rapi-Dri 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 100μ l. 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.

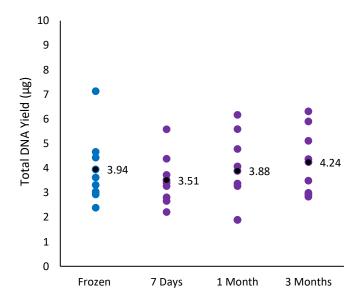


Figure 1: Scatter plot of total DNA yields of samples collected from each set, with mean total yield (in μ g).

 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.



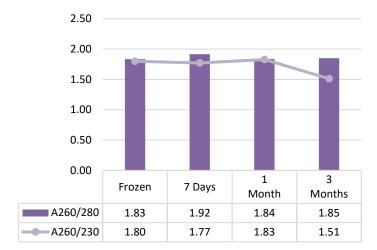


Figure 2: Chart displaying mean A260/280 & A260/230 ratios of samples collected using RapiDri, compared to frozen swabs.

 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.

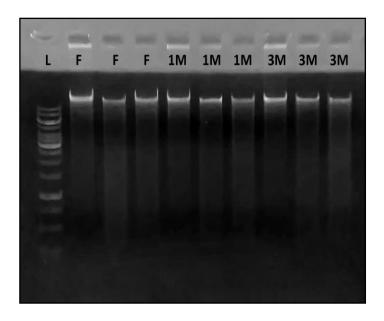


Figure 3: 1.0% agarose gel analysis of DNA integrity from samples collected using RapiDri; comparing Frozen (**F**) swabs to 1 Month (**1M**) & 3 Month (**3M**) RapiDri samples.

 Gel data indicates that samples stabilised by RapiDri maintain their integrity over three months with minimal degredation, 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.

