



Myra Liquid Handling System

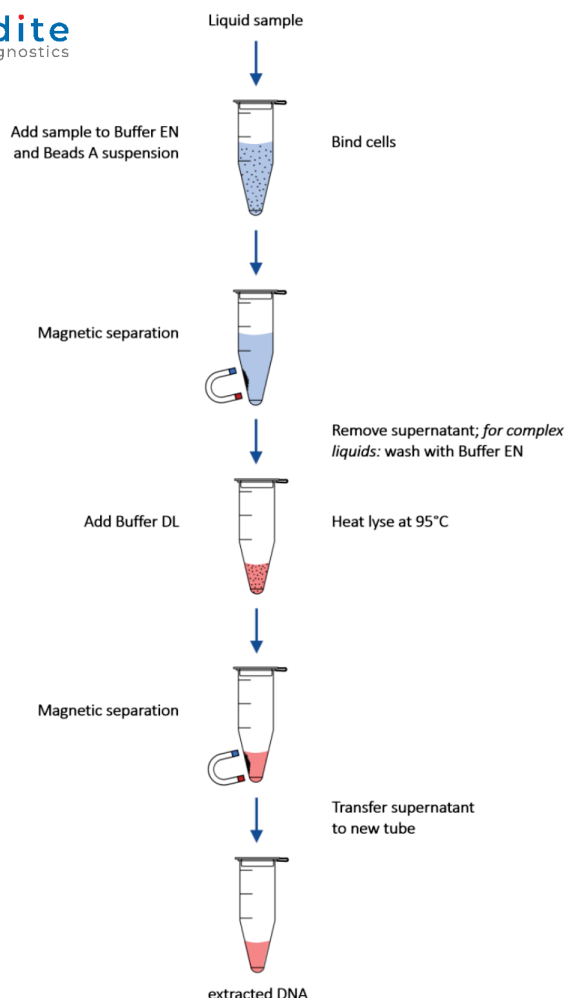
SwiftX™ DNA Extraction (Blood Only)

SwiftX™ Technology by Xpedito Diagnostics

SwiftX™ technology is designed for rapid extraction of DNA from a wide range of biological samples, including whole blood, using a unique cell capture and reverse purification technology to actively remove inhibitors and cell debris.

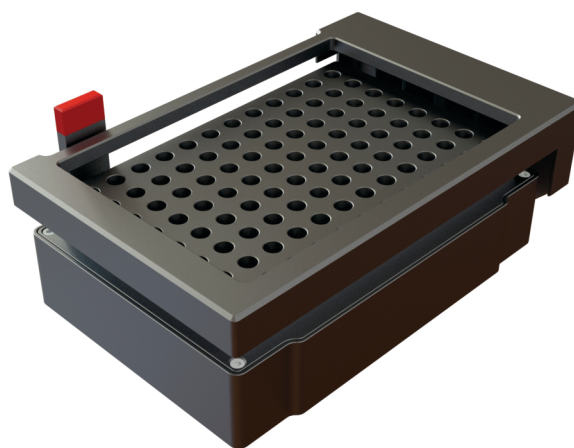
The different components of SwiftX™ have specific functionalities that benefit the DNA extraction process.

- Buffer stabilises biological cells.
- The paramagnetic beads show a broad binding property to cells and proteins.
- In conjunction with the application of heat, the buffers enable an efficient lysis of cells.
- Extracted samples are fully compatible with a wide range of PCR chemistries.

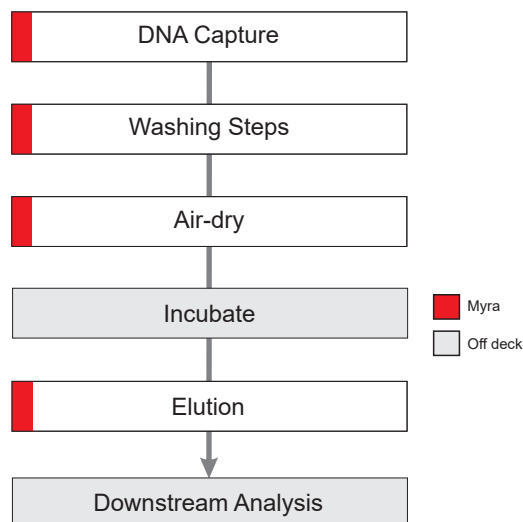


Automation on the Myra

By using the 96 Well Magnet Station accessory, Myra is capable of automating SwiftX™ technology to offer a simple solution for the extraction of DNA from blood specimens. The simplicity of the protocol ensures a quick extraction methodology and enables the use of smaller sample and reagent volumes, thereby saving time and money.



Myra is very capable of handling whole blood samples. The pipette aspiration ensures the blood remains within the tip and does not result in potential contamination of the deck.



Summary

Our results demonstrate the time-saving benefits of the SwiftX™ technology, with the Myra offering an automated solution with the exception of a single off-deck heating step. The technology is comparable to existing extraction mechanisms while reducing sample and reagent quantities. Save time and money.

Case Study: SwiftX™ DNA Extraction (Blood Only)

Experimental Setup

DNA purification from whole blood specimens using the Xpedit Diagnostics technology was evaluated on the Myra liquid handling system and compared to a manual approach using a competitor exaction kit.

Extraction Protocol

The following protocol was performed using the SwiftX:

1. Add 100 µL of **Buffer EN**, 30 µL of **Beads A** and 50 µL of whole blood into a 200 µL PCR tube.
2. Thoroughly mix beads with sample to bind DNA.
3. Capture beads using magnets (2 min).
4. Perform 2x wash steps with 200 µL of **Buffer EN** to remove impurities and contaminants.
5. Air-dry to remove residual traces of reagents (1 min).
6. Pipette 50 µL of **Buffer DL** to the beads and release magnets.
7. Incubate samples at 95°C (5 min).
8. Resuspend beads and mix with the elution buffer to release DNA.
9. Capture beads using magnets (2 min).
10. Elute 40 µL of purified DNA into new tubes

Specimens Used

Whole blood was collected into a 6 mL BD Vacutainer® K2 EDTA tube from two BMS employees. Each specimen was then aliquoted into 2 mL screw cap tubes. We compared the SwiftX reagents to a competitor kit and to a manual preparation.

Analysis of eluate quality was subsequently performed with a qPCR for the human RNaseP gene and genotyping profile for the HIF-1 sports gene.

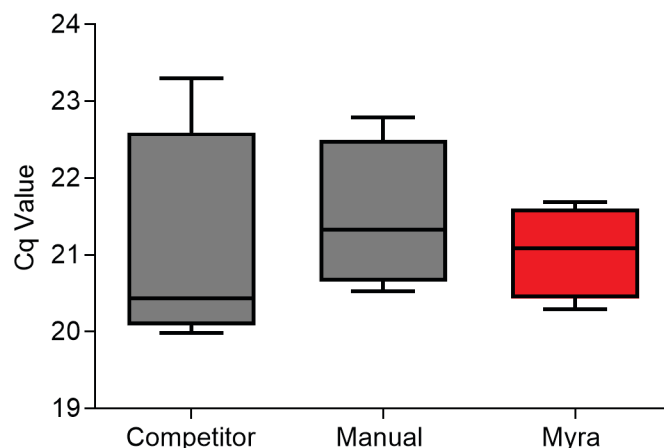
Reaction setup was performed using the Myra, with qPCR reactions run on the Mic.

Step	Temperature	Time
Initial Activation	95°C	2 minutes
Cycling 40X	95°C	5 seconds
	65°C	20 seconds
Total		45 minutes

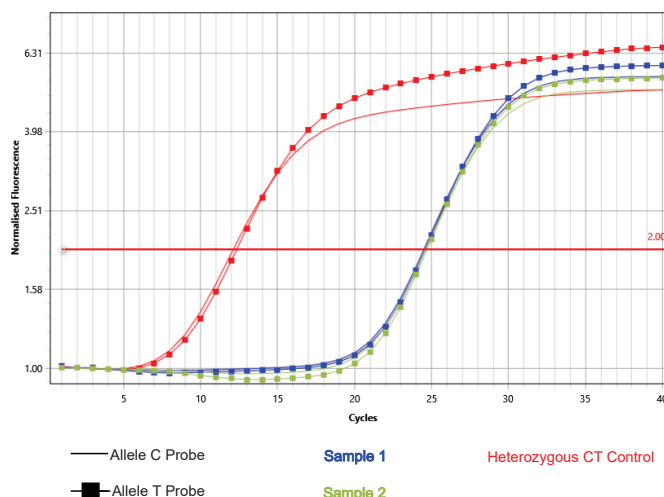
The Xpedit Diagnostics SwiftX™ technology is fully compatible on the Myra, providing a simple automated solution for DNA extraction from whole blood specimens.

Results

The SwiftX™ technology performed on par with a competitor technology, as demonstrated by successful amplification of a human gene (RNaseP). The Myra protocol could extract samples 50% faster than the competitor and manual methods.



Eluates from the Myra successfully amplified in an allelic discrimination run for the sports gene HIF-1, further demonstrating the quality of prepared sample using the SwiftX™ technology on the Myra.



Summary

The results highlight the advantages of using the Xpedit Diagnostics SwiftX™ technology on Myra for DNA extraction from whole blood. High quality samples can be extracted in shorter time and be used in qPCR runs such as allelic discrimination.