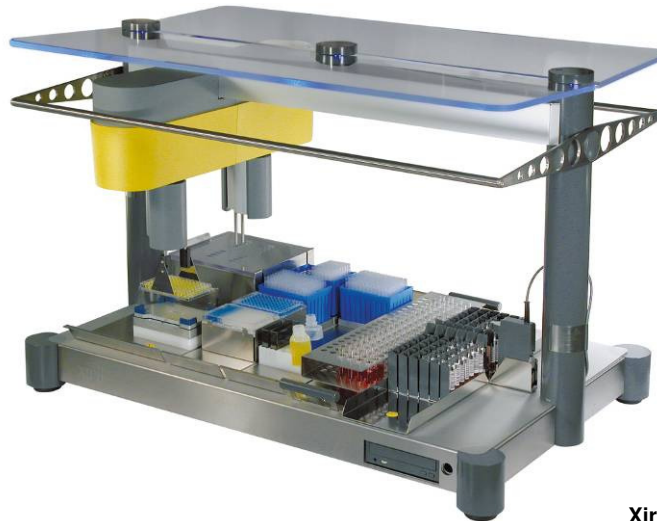


DNA IQ™ System on the Xiril robotic workstation



Xiril X100-1-4

Introduction

DNA analysis has widespread applications in the clinical, research and forensic field. Manual methods for the purification of a big number of nucleic acids can be laborious and time consuming. Xiril offers an optimal combination of the reliable Promega DNA extraction method with its highly accurate robotic workstation. This fully automated method based on a paramagnetic resin for DNA isolation allows a high sample throughput with a reliable and cost-effective solution. The Promega system is designed to rapidly purify small quantities of DNA and give consistent yields for a specific sample type. Together with the Xiril robotic workstation it allows the walk away extraction of up to 96 samples DNA within 70 minutes.

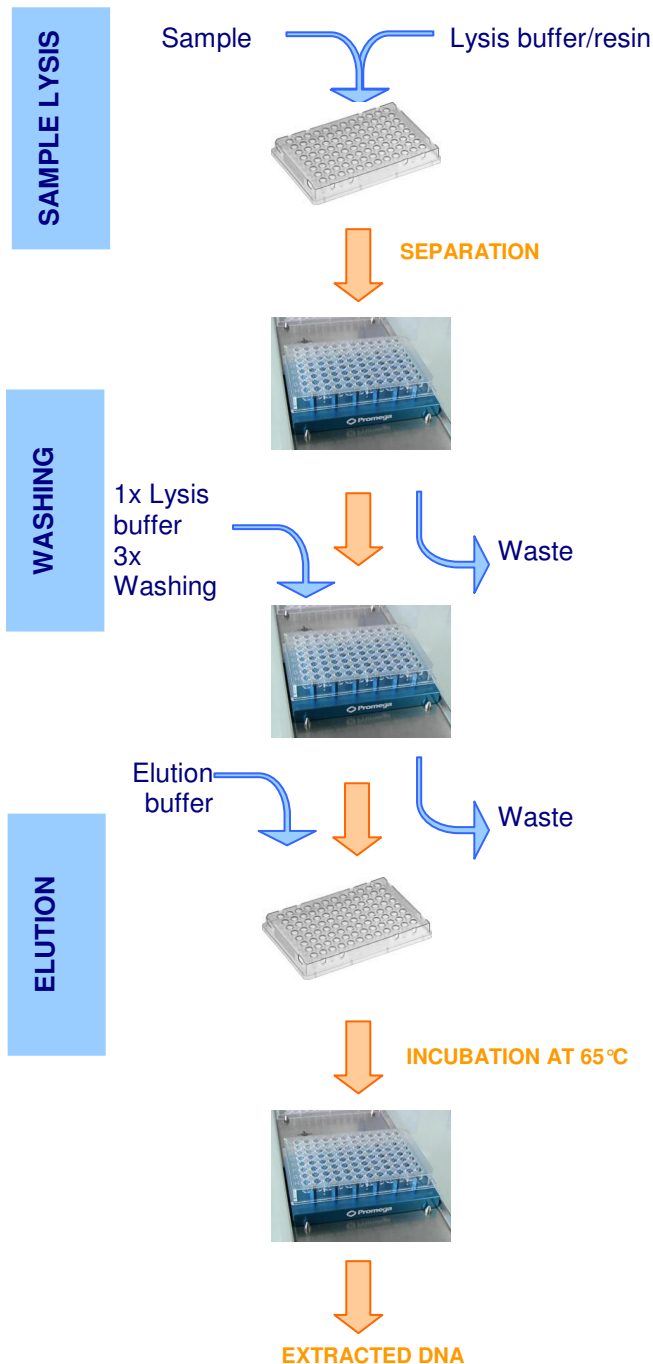
Key Features:

- Isolation of a consistent DNA amount from a broad variety of samples
- Reliable and reproducible operation
- High capacity, 96 samples within 70 min (eight pipettes)
- Ready to use system
- Low tip throughput
- Sample identification possible
- Low cost solution



Application guide

Description



Extracted from the technical bulletin:
DNA IQ™ System-Small Sample Casework Protocol

1. Predispense manually 100 μ l lysis buffer – beads mix (93 μ l lysis buffer and 7 μ l resin) in each well of the process plate.
2. Add up to 40 μ l sample into the process plate.
3. Incubate the process plate at room temperature for 5 min.
4. Move the plate to the magnetic plate and allow the beads to settle down.
5. Remove the lysis buffer and move process plate onto the thermomixer.
6. Add 100 μ l new lysis buffer and mix for 10 sec.
7. Move the plate onto the magnetic plate and allow the beads to settle down.
8. Remove the lysis buffer and move process plate onto the thermomixer.
9. Add 100 μ l washing buffer and mix for 10 sec.
10. Move the plate onto the magnetic plate and allow the beads to settle down.
11. Remove the washing buffer and move process plate onto the thermomixer.
12. Repeat steps 9 to 11 two times.
13. Let the bead-pellet air dry at room temperature for 5 min.
14. Add the needed amount of elution buffer and move plate onto the thermomixer.
15. Incubate the process plate at 65°C for 5 min. under shaking.
16. Move the plate onto the magnetic plate and allow the beads to settle down.
17. Transfer the DNA-solution into the elution plate.



Application guide

Capacity and Throughput

The Xiril robotic workstations are easily configured to meet different demands for capacity and throughput. Two deck sizes (100-series and 150-series) and the option of four or eight pipettes provide the flexibility to readily meet your requirements. Refer to table 1 below for approximate throughputs for 96 samples for two different instrument configurations.

Table 1: Throughputs for 96 samples for the 100-series instruments with 4 or 8 pipettes.

Instrument	Run duration [minutes]
100-series, 1 arm, 4 pipettes	115
100-series, 1 arm, 8 pipettes	70

Automated Processing Requirements for the 100-series with One Robotic Arm and Four Pipettes

A. XIRIL ROBOTIC WORKSTATION DECK SETUP

This is an example of DNA extraction deck layout on a 100-series-1-4 robotic workstation for use with one plate (96 samples). The layout can be easily configured to user's needs with the flexibility to position hardware and labware freely on the instrument deck. The samples can be hold in different containers such as 96-well microplate, Eppendorf tubes or sample tubes. Furthermore if needed the sample identification and tracking can be enabled by the following methods: The import of a sample file (e.g. LIMS), which is implemented in the Lirix software, a handheld barcode reading, plate scanning and finally tube scanning. Please refer to the figure below for the recommended deck layout.

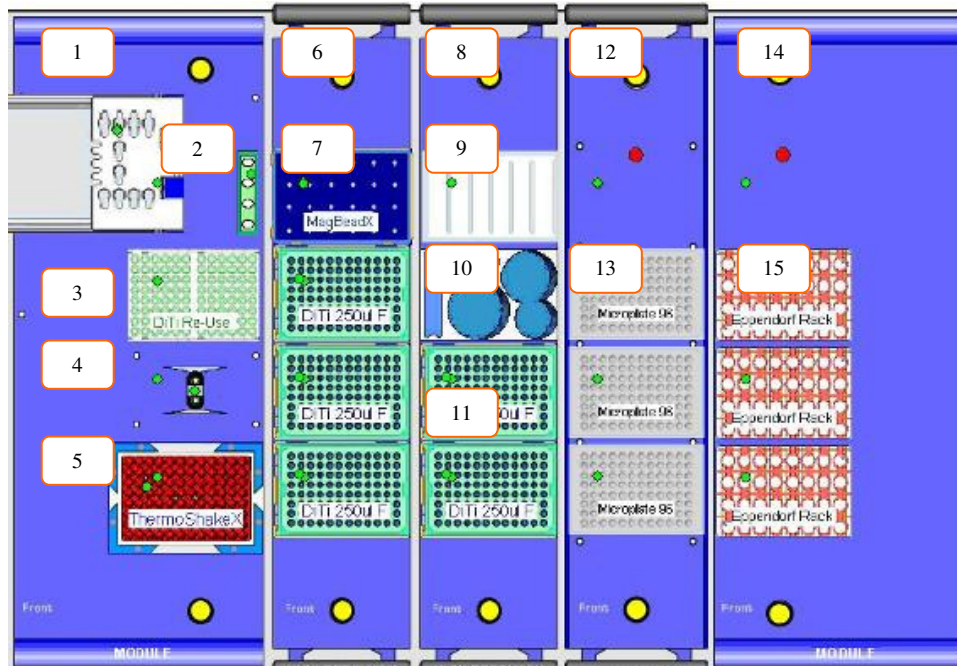
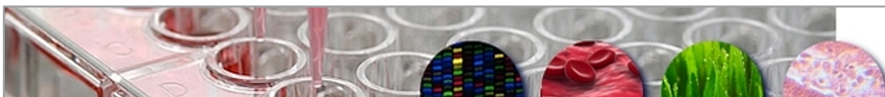


Figure 1: Deck layout for DNA extraction on the Xiril 100-1-4 robotic workstation.

1: Module Decktray, 2: Tip waste station and liquid waste, 3: Re-Use rack for tips, 4: Plate-GripX, 5: ThermoShakeX, 6: High Precision Decktray, 7: MagBeadX, 8: High Precision Decktray, 9: Reagent rack incl. 6 troughs, 10: Reagent rack, 11: 250 µl Rainin filter tips, 12: Standard Decktray, 13: 96-well microplate, 14: Module Decktray, 15: Rack for 32 microfuge tubes.



Application guide

B. MATERIAL SUPPLIED WITH THE XIRIL ROBOTIC WORKSTATION

The following is a list of Xiril parts (see table 2) that are required for automation of the DNA extraction with the Promega DNA IQ™ System on the 100-series-1-4 robotic workstation.

Table 2: List of the required Xiril parts.

Part number	Part Description	Quantity
900 004	Xiril 100 incl. in-built PC, one robotic arm, 4 pipettes (2-250 µl)	1
950 007	High Precision Decktray with 4 rack positions	2
950 005	Standard Decktray with 4 rack positions	1
950 043	Module Decktray left with tip waste and 3 rack positions	1
950 051	Module Decktray right	1
920 027	Thermo-ShakeX 95C (heated micro plate shaker)	1
920 015	Plate-MagBeadX (magnetic plate for beads separation in microplates)	1
950 079	Plate-MagBeadX spacer, 4 mm	1
950 040	Tip Re-Use Rack for 96 * 250 µl disposable tips (microplate footprint)	1
920 008	Plate-GripX, gripper for objects with a microplate footprint	1
950 012	Adapter for Rainin disposable tip rack	5
950 092	Assorted rack	1
950 078	Reagent rack for 6 troughs	1
950 032	Rack for 32 microfuge tubes, 1.5-2.0 ml (polyamide; microplate footprint; autoclavable)	3
950 020	Trough, reagent container (10 X 50 ml)	1
950 052	Liquid waste reservoir	1

C. MATERIAL SUPPLIED BY THE USER

The following is a list of material that is required for the automation of the DNA extraction with the Promega DNA IQ™ System.

Table 3: List of the required material for 100 samples.

Part	Quantity [package]	Ordering Information
Promega DNA IQ™ System-Small Sample Casework	1	DC6701
Rainin 250 µl disposable tips filtered, 96 pieces	4	Rainin, Cat. # RT-L250F or GP-L250F
Round bottom microplate	2	Any manufacturer