

Potato DNA / RNA rapid extraction

Nucleic acid extraction
for potato samples

User Guide



1. Introduction

1.1 General

The potato DNA/RNA rapid extraction sets enable the efficient extraction of total nucleic acids (DNA and RNA) from potato samples.

Suitable tissues from potato are leaves and tubers (peel, stolon, sprouts). The extracted DNA or RNA can be used for diagnostic tests such as classic PCR or real-time PCR.

1.2 Special handling instructions

Perform RNA extractions in an RNase free work environment. Always wear gloves when handling samples containing RNA and kit components. Do not pick up any kit component with an ungloved hand. Keep all kit components tightly sealed when not in use. Keep all tubes containing RNA tightly sealed during the incubation steps. It is essential to wear protective disposable gloves at all times. Use appropriate laboratory consumable parts. Especially use nuclease free tubes and filter tips to avoid degradation and cross contamination. Do not use kit components with different lot numbers together. In order to avoid crosscontamination and receive reliable results, it is essential to strictly follow the protocol in this manual. The recommended pool size of samples is 10 or 25 depending of the subsequent diagnostic protocol (see 2).

1.3 Warranty and liability

BIOREBA products are guaranteed to meet the specifications described on the product certificate of analyses and user guide that is added to each shipment. No further warranties are given. If you have any questions about specification or performance, please contact our administration (admin@bioreba.ch).

Our products are for laboratory use only and are not to be used for human or animal applications. Should a product fail for reasons other than inappropriate handling or misuse, BIOREBA AG will replace the product free of charge or refund the purchase price.

BIOREBA AG shall not be liable for any direct or indirect, special or consequential damages of any kind resulting from the use of our products.

2. Intended use

The potato DNA/ RNA rapid extraction sets are validated for potato leaf and tuber samples (peel, stolon and sprouts). Dormant tubers can be pooled for rapid DNA/RNA extractions and used in diagnostic PCR protocols for the detection of potato pathogens.

The sets are available in two different sizes namely for 96 and 192 tests. Sets 810003 (96 tests) and 810005 (192 tests) are intended for single samples and pools of up to 10 tubers.

Sets 810004 (96 tests) and 810006 (192 tests) are intended for pools of up to 25 tubers (see 3.1).

NOTE: DNA/RNA extracts from single samples and pools of up to 25 tubers give reliable results in diagnostic tests such as classic PCR or real-time PCR.

3. Format, content, storage condition and quality

3.1 Format and content

Art. No.	Description	Components		
		Art. No.	Description	Volume
810003	Potato DNA / RNA rapid extraction set 96 / 10x for 96 extractions (Pool size: up to 10 tuber samples)	610001	Rapid extraction buffer EB 1 (p)	100 ml
		610007	Rapid extraction buffer EB 2 (p)	50 ml
		450100	Extraction bags Standard 12x15 cm	100 pcs
810004	Potato DNA / RNA rapid extraction set 96 / 25x for 96 extractions (Pool size: up to 25 tuber samples)	610001	Rapid extraction buffer EB 1 (p)	2 x 100 ml
		610007	Rapid extraction buffer EB 2 (p)	50 ml
		450100	Extraction bags Standard 12x15 cm	100 pcs
810005	Potato DNA / RNA rapid extraction set 192 / 10x for 192 extractions (Pool size: up to 10 tuber samples)	610001	Rapid extraction buffer EB 1 (p)	2 x 100 ml
		610007	Rapid extraction buffer EB 2 (p)	2 x 50 ml
		450100	Extraction bags Standard 12x15 cm	2 x 100 pcs
810006	Potato DNA / RNA rapid extraction set 192 / 25x for 192 extractions (Pool size: up to 25 tuber samples)	610001	Rapid extraction buffer EB 1 (p)	4 x 100 ml
		610007	Rapid extraction buffer EB 2 (p)	2 x 50 ml
		450100	Extraction bags Standard 12x15 cm	2 x 100 pcs

3.2 Storage condition

Store the components of the potato DNA / RNA rapid extraction sets at room temperature.

3.3 Lot to lot consistency

Quality control of the potato DNA/RNA rapid extraction set is performed against predetermined specifications to ensure consistent product quality. See lot dependent certificate of analysis provided with the shipment.

4. Materials and equipment required (not provided)

- Microcentrifuge (capable of $\geq 6000 \times g$)
- RNasefree filter tips and micropipets
- RNasefree polypropylene centrifuge tubes with caps, capable of withstanding centrifugal forces of $6000 \times g$
- Disposable latex or vinyl gloves
- Tissue homogenizer (e.g. homogenizer hand model with ceramic balls Art. No. 400011 or HOMEX 7 Art. No. 400007S)

5. Protocol

DNA / RNA extraction

Put 0.2 g potato tissue into a clean grinding bag



Gently shake the rapid EB 1* and for single tests pipette** 500 µl rapid EB 1 into the grinding bag



Homogenize the potato tissue with a grinder



Transfer 100 µl homogenate avoiding the debris into a clean tube



Incubate the tube at 99.9 °C for 2 min then at 85 °C for 13 min and place immediately on ice



Spin the samples for 30 sec at 6000 g



Transfer 10 µl of supernatant without disturbing the debris into a fresh tube containing 190 µl rapid EB 2



Vortex the sample briefly



Proceed with subsequent methods***

Please pay attention to the following points:

- The protocol in this manual must be followed
- Create an RNase free environment by cleaning the bench with 1 % bleach followed by 75 % ethanol
- Gloves must be worn at all time
- Use nuclease free tubes and filter tips
- Wear appropriate protective eyewear and clothing

*Before shaking the buffer can show two phases

**For pools of 10 tubers use 1ml and for pools of up to 25 tubers use 2ml EB1

***For optimal results proceed with subsequent methods immediately