MANUAL

DNA Q-Extraction PCR Kit Red

fast and easy DNA extraction of various samples & PCR in One Kit

Component	Cat#	M3251.0100	M3251.0500	Colour code of cap
DNA Q-Extraction Solution		10mL	5 x 10mL	white
PCR RedMastermix (2X)		1.25mL for 100x 25µL reactions	5x 1.25mL for 500x 25µL reactions	red
25mM MgCl2 solution		1mL	1mL	green

Description

The **Genaxxon's DNA Q-Extraction PCR Kit Red** combines the **DNA Q-Extraction Solution** with the **Red MasterMix (2X)** to provide a streamlined workflow for rapid DNA extraction and subsequent PCR amplification.

The DNA Q-Extraction Solution enables the preparation of **PCR-ready DNA in as little as 8 minutes** without the need for conventional purification or clean-up procedures. The extracted DNA can be **used directly in downstream PCR** applications using the included Red MasterMix (2X).

The kit is suitable for a **wide range of sample types**, including mammalian tissue, bacteria, saliva, yeast and mold, making it particularly useful for routine PCR applications and genotyping workflows.

Using the standard extraction protocol, PCR-ready DNA can be obtained without additional purification steps, extending the versatility of the kit to a broader range of biological samples. By combining rapid sample preparation with reliable PCR amplification, the DNA Q-Extraction PCR Kit Red offers a **simple and efficient solution for DNA analysis workflows**.

Product specifications

Concentration:	2X ready-to-use master mix
Extension rate:	1-2 kb/min. at 72°C
Extra addition of A:	Yes

Advantages

Complete kit for **fast direct PCR from various samples**
Includes **extraction + robust PCR master mix**
Fast workflow without conventional DNA extraction
No extra steps – Loading dye already included

Shipment: on wet ice

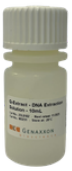
Long-Term Storage: Stored at -20°C immediately upon receipt.

Shelf-life: Stable until expiration date when stored and handled correctly.
DNA Q-Extraction Solution tolerates up to 20 freeze-thaw cycles. It is recommended to aliquot the Q-Extract into smaller volumes.

Important notes before getting started

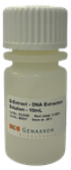
- This protocol is a guideline; optimize conditions as needed.
- Readjust threshold value for analysis of every run.
- RedMastermix provides an optimized concentration of MgCl2 which will produce satisfactory results in most cases.
- Set up all reaction mixtures in an area separate from that used for DNA preparation or PCR product analysis.
- Use disposable tips containing hydrophobic filters to minimize cross-contamination.

Extraction Protocol



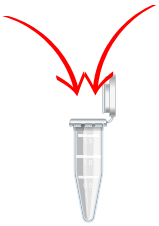
Thaw DNA Q-Extraction solution

For the first time use, mix the DNA Q-Extraction solution well and aliquot it into smaller volumes. (DNA Q-Extraction Solution has a cloudy appearance).



100µL

sample

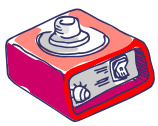


Add your sample to a tube containing 100µL DNA Q-Extraction Solution

Recommended sample sizes

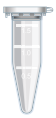
Sample	DNA Q-Extraction Solution 100µL	500µL
Tissue*	0.5 -10mg	10 - 50mg
E. coli	1 colony (0.5 – 2mm)	1 colony (0.5 – 2mm)
Saliva	10 - 20µL	50 - 100µL

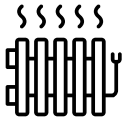
* Examples of tested tissues include mouse tail snip, mouse organs and chicken breast.



Vortex the tube containing the sample and the DNA Q-Extraction Solution for 15 sec.

Make sure that the sample is completely covered by the DNA Q-Extraction Solution.





Transfer the tube to a heat block or a thermal cycler and incubate as indicated in the table on the right.

Incubation

Time	Temperature
6 min	65 °C
2 min	98 °C
hold	4 °C or cool down on ice

DNA extracts are stable at -20°C for one week or long term at -80°C.

Please note:
In some cases, we recomment to dilute the DNA lysates prior to the PCR (usually 5- to 10-fold dilutions). We recommend an optimization by performing a serial dilution.

MANUAL

PCR Protocol

Thaw primer solutions

Keep on ice after complete thawing and mix well before use.

Optional:

Prepare a primer mix of an appropriate concentration using sterile, nuclease-free water. This is recommended if several amplification reactions using the same primer pair are to be performed. The final volume of diluted primer mix plus the template DNA should not exceed 25µL per reaction.

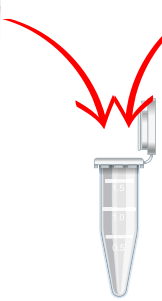
Thaw PCR RedMastermix (2X) at RT or on ice.

Keep on ice after thawing and mix well before use.

It is very important to mix the PCR RedMastermix well before use to avoid local differences in salt concentration.

The Genaxxon bioscience PCR RedMastermix is provided as a 2X concentrated (i.e. a 12.5µL volume of PCR RedMastermix is required for PCR reactions with a final volume of 25µL). For volumes smaller than 50µL, the 1:1 ratio of PCR RedMastermix to diluted primer mix, template DNA and water should be maintained. A negative control (PCR without template DNA) should be included in every experiment. It is recommended that the PCR tubes are kept on ice until they are placed in the thermal cycler.

primer
template DNA
Nuclease-free H2O

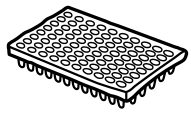


Distribute 25 µl reaction mix into each tube.

PCR protocol

Components	Quantities
PCR RedMastermix (2X)	12.5 µL
Diluted primer mix:	
primer 1:	variable volume: 0.1 - 0.25 µM (5 – 12 pmol absolute)
primer 2:	variable volume: 0.1 - 0.25 µM (5 – 12 pmol absolute)
DNA lysate*	2µL (5-fold dilution; maybe optimization)
Nuclease-free water	up to 25µL

*extracted with DNA Q-Extraction Solution (M3231)



Place PCR tubes in the thermal cycler* and start program.

A typical PCR cycling program is outlined on the right For maximum yield and specificity, temperatures and cycling times should be optimized for each new target or primer pair.

*When using a thermal cycler with a heated lid, do not use mineral oil. Otherwise, overlay with app. 50µL mineral oil

PCR conditions

Step	Time	Temperature
Initial denaturation	3 min	95 °C
Denaturation	0.5 - 1 min	95 °C
Annealing	0.5 - 1 min	50 - 68 °C*
Extension	0.5 - 1 min**	72 °C
Number of Cycles	25 - 35	
Final Extension	10 min	72 °C

*Approximately 5°C below Tm of primers
**For PCR products longer than 1kb, use an extension time of approximately 1min./kb DNA.

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Additional information

Quality Control

Genaxxon bioscience DNA Q-Extraction PCR Kit Red undergoes stringent quality controls. Each lot is tested in a Green dye-based realtime PCR.
The enzyme purity and homogeneity of >98% is validated.
All master mixes are free of endonuclease- and exonuclease activity.

Safety information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). These are available online as pdf-file or on request (info@genaxxon.com).

Product Use Limitations

DNA Q-Extraction PCR Kit Red is developed, designed, and sold for research purposes only. It is not to be used for human, diagnostic or drug purposes or to be administered to humans unless expressly cleared for that purpose by the Food and Drug Administration in the USA or the appropriate regulatory authorities in the country of use. All due care and attention should be exercised in the handling of many of the materials described in this manual.

Further information

For more information, please visit our website: www.genaxxon.com or contact us:
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