



Protocol
DNA Isolation
from Blood (200 µl)
by nexttec™ 1-Step

- nexttec™ cleanColumns -

Cat. No. 50N.010

Cat. No. 50N.050

Cat. No. 50N.250

Version 2.0

For research only

Principle

nexttec™ 1-Step is the easiest handling and fastest DNA purification system containing a single buffer system and a one-step DNA purification after lysis.

Proteins, detergents and low molecular weight compounds are retained by the nexttec™ sorbent. DNA passes through the nexttec™ cleanColumn during a short, one-step purification procedure.

The obtained DNA is suitable for all common enzymatic reactions (restriction digests, real-time PCR, PCR, genotyping etc.).

Kit contents

The kit contains all necessary reagents for lysis and subsequent DNA purification.

Component	Art.No. 50N.010	Art.No. 50N.050	Art.No. 50N.250
Solution B	2*10 ml	2*50 ml	2*200 ml
DTT	0.2 ml	0.2 ml	0.5 ml
Buffer R	2 ml	10 ml	38 ml
Proteinase K	0.3 ml	1.5 ml	6 ml
Prep Solution	6 ml	20 ml	100 ml
nexttec™ cleanColumns	10	50	250
Waste collection tubes	10	50	250
DNA collection tubes	10	50	250

nexttec™ service

To extend the application range to samples, which are difficult to lyse by the standard procedure, it is recommended to include optional components in the lysis buffer and to optimize the lysis time. Please get in contact with xpressbio@xpressbio.com for detailed information.

Storage Conditions

During shipment all kit components are stable at room temperature. After arrival, **Proteinase K, Solution B, Buffer R** and **Prep Solution** must be stored at **+2°C to +8°C**. Store **DTT** after first opening at **-18°C to -25°C**.

nexttec™ cleanColumns are stored at room temperature (**+20°C to +25°C**). If properly stored, see expiration date for the stability of the kit.

Safety Information

Proteinase K Xn R 36/37/38 R42/43; S 23-24-26 36/37
DTT Xn R 22-36/37/38; S 26-36

Risk Phrases

R 22 Harmful if swallowed
R 36/37/38: Irritating to eyes, respiratory system and skin.
R 42/43: May cause sensitisation by inhalation and skin contact.

Safety Phrases

S 23: Do not breathe Gas/fumes/vapour/spray.
S 24: Avoid contact with skin.
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37: Wear suitable protective clothing and gloves.

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 (MSDS).

Before starting

- **Equilibrate nexttec™ cleanColumns**

E1	Add 350 µl Prep Solution to a nexttec™ cleanColumn . Incubate for at least 5 min at room temperature. Centrifuge at 350x g for 1 min to remove excess buffer.
E2	Discard the Waste collection tube. Place the nexttec™ cleanColumn into a new DNA collection tube. Use equilibrated nexttec™ cleanColumns or store closed at +2°C to +8°C and use within one week .

- Preheat a thermomixer to 56°C

Protocol

Lysis

L1	Transfer 200 µl of <u>cold</u> EDTA or heparinized blood to a 1.5 ml reaction tube. Add 600 µl <u>cold</u> Solution B . Invert tube several times to mix the contents thoroughly (<u>don't vortex!</u>).
L2	Incubate 5 min on ice. Centrifuge the mixture (3 min, 6,000x g), remove 700 µl carefully and discard the supernatant.
L3	Add 500 µl <u>cold</u> Solution B . Invert tube several times to mix the contents thoroughly (<u>don't vortex!</u>).
L4	Incubate 5 min on ice. Centrifuge the mixture (3 min, 6,000x g), remove 550 µl carefully and discard the supernatant.
L5	Add 125 µl Buffer R , 20 µl Proteinase K and 1.5 µl DTT* . Resuspend pellet by pipetting up and down (3 times) or by vortexing. Incubate the sample with shaking (56°C, 1200 rpm, 30 min) in a thermomixer.

*For Pre-Mixes see Technical Section.

Purification of DNA

P	Transfer 100 µl of the lysate to an equilibrated nexttec™ cleanColumn . Incubate for 3 min at room temperature . Centrifuge at 700x g for 1 min .
	The eluate contains the purified DNA!!

Notes:

Technical Section

- **Preparation of Lysis buffer LR (Pre-Mixes)**

LR	Lysis Buffer LR:	1 sample	<50 samples*	>50 samples*
	Buffer R	125 µl	125 µl x (n+3)	125 µl x (n+5)
	DTT	1.5 µl	1.5 µl x (n+3)	1.5 µl x (n+5)
	Proteinase K	20 µl	20 µl x (n+3)	20 µl x (n+5)
Mix thoroughly by vortexing. Add 146.0 µl of Buffer LR to the pellet (L3). The Lysis Buffer LR is stable for 1 working day if stored at +2°C to +8°C .				

*n= samples [e.g. 22 samples: Buffer R: 125 µl x (22+3)]

- **Determination of DNA concentration in nexttec™ 1-Step DNA preparations**

We recommend to determine the DNA concentration:

- Using the fluorescent dye Picogreen® or similar.
- Comparing the fluorescence intensity of DNA bands of unknown concentration with standards, e.g. in ethidium bromide stained agarose gels.

Please notice:

The use of absorption measurement at 260nm (A_{260}) in a spectrophotometer (e.g. NanoDrop®) for determination of DNA concentration is system related not recommended. For details and possible workarounds for your specific application please contact: xpressbio@xpressbio.com.

- **Centrifugation**

For centrifugation at 350x g or 700x g use the settings for relative centrifugal force (RCF) of your centrifuge. Alternatively measure the distance of the nexttec™ cleanColumn to the centre of your rotor and calculate the necessary rotations per minute (e.g. rpm = $299.07 \times \sqrt{350/r}$; r=radius in cm).

Product Use Restriction

nexttec™ 1-Step DNA Isolation Kit components were developed, designed and sold **for research purposes only**. They are suitable for in vitro uses only. No claim or representation is intended for use to identify any specific organism or for clinical use.

It is the responsibility of the user to verify the use of the nexttec™ 1-Step DNA Isolation Kit for a specific application as the performance characteristic of this kit has not been verified to a specific organism.

Troubleshooting, FAQ and Special Applications

Product claims are subject to change. Therefore, please, visit our website or contact our technical service team for troubleshooting guide, up-to-date protocols and latest applications on nexttec™ 1-Step products.

