

## sbeadex<sup>®</sup> tissue kit and KingFisher 96 instrument

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### Background

The sbeadex<sup>®</sup> tissue kit (Cat. No. 41405 or 41450) has been developed for extraction of genomic DNA from tissue material (muscle, liver, pig ear punch, etc.). Most sample types can be lysed enzymatically without mechanical disruption. The magnetic particle based DNA extraction protocol can be easily automated using a KingFisher 96 (Thermo Fisher Scientific) magnetic particle manipulator. Using magnetic rods, which are protected against contamination by a tip comb, the magnetic beads are transferred from one buffer plate to the next during the extraction process. This instrument can process up to 96 samples per run. In addition, the KingFisher 96 instrument is compatible with liquid handling systems and sample handling devices, thus making a hands-free medium to high throughput system a reality.

sbeadex<sup>®</sup> coated magnetic particles bind DNA using a novel two-step binding mechanism in the presence of detergents and salts. After binding and washing steps, the purified DNA is released in elution buffer. The sbeadex<sup>®</sup> tissue kit is supplied with ready-to-use buffers. The processing time on the KingFisher 96 is approximately 30 minutes.

### Equipment and reagents

Product description	Cat. No.	Labware required per run
sbeadex <sup>®</sup> tissue kit (96 tests)	41405	-
sbeadex <sup>®</sup> tissue kit (960 tests)	41450	-
KingFisher 96 magnetic particle processor	5400500*	-
KingFisher 96 DW magnet	24073430*	-
KingFisher 96 tip comb for DW magnet	97002534*	1
KingFisher 96 plate 200 µL	97002540*	1
DW 96 plate, V-bottom, polypropylene	95040450*	4
Ultrapure water (not part of the kit)	User supplied	-

**Table 1:** Equipment and reagents required for DNA extraction using the sbeadex<sup>®</sup> tissue kits on KingFisher 96.

\* supplied by Thermo Fisher Scientific

The method described here is a universal tissue protocol which can be used for a wide range of tissue types without adaptation. Whenever necessary, customisation of the protocol is possible using the software provided with the instrument.

### System set-up

- A copy of the instrument protocol is available on request (email: [extraction@lgcgenomics.com](mailto:extraction@lgcgenomics.com))
- The instrument protocol is compatible with the KingFisher software version 2.6.22
- For tips and advice on how to adapt the instrument protocol for the BindIt<sup>™</sup> software of the KingFisher Flex instrument please email [extraction@lgcgenomics.com](mailto:extraction@lgcgenomics.com)
- See the sbeadex<sup>®</sup> tissue kit protocol for further information about the kit, limitations of product use, safety information etc.

## Importing instrument protocol

To save the instrument protocol to your computer:

1. Open KingFisher software
2. Select **Cancel** in the Startup window
3. Select **Protocol** → **Import/Export data**
4. Click **Read file** on the left side of the 'Import/Export protocols' window. An 'Open' window appears
5. Select the protocol you want to import ('**sbx\_tissue\_KF96.kf2**') and click **Open**
6. The protocol appears in the 'Protocols in file' list
7. Select protocol '**sbx\_tissue\_KF96.kf2**' in the 'Protocols in file' list and click **Import**
8. A message will appear that the update of the database was successful
9. Now you can start the protocol directly from the software or transfer it to the KingFisher 96 instrument
10. Select **Instrument** → **Send protocol to Instrument**
11. Select the protocol ('**sbx\_tissue\_KF96.kf2**') from the list 'Protocols for selected instrument' and click **Send protocol**
12. After the transfer of the protocol to the KingFisher 96 instrument a message will appear indicating the successful transfer.

## Instrument procedure sbeadex® tissue kit

1. Add 60 µL of Lysis buffer TN 1 and 15 µL of Protease solution to 20 - 30 mg of sample material and mix thoroughly. Incubate overnight at 55 °C
2. Fill the following deep well/ KingFisher plates with sbeadex tissue kit reagents as specified in table 2:
  - Add 200 µL of the tissue samples into wells of a deep well plate 'Binding\_Pos1'.
  - Plate 'Wash1\_Pos2'
  - Plate 'Wash2\_Pos3'
  - Plate 'Wash3\_Pos4'
  - Plate 'Elution\_Pos5'
3. Add 50 µL of the lysate to the wells of the prepared deep well plate 'Binding\_Pos1' (see Table 2)
4. Select the **sbx\_tissue\_KF96** protocol on the KingFisher 96 instrument
5. Load the prepared plates as prompted by the software and start the instrument
6. After approximately 30 min the protocol will be finished and the genomic DNA is ready for downstream analysis.

Plate name in protocol	Plate type	Well content	Volume
Comb_Pos6	KingFisher 96 KF plate	Tip comb	-
Binding_Pos1	DW 96 plate, V-bottom	Lysate	50 µL
		Binding buffer TN 2	110 µL
		Particle suspension TN	15 µL
Wash1_Pos2	DW 96 plate, V-bottom	Wash buffer TN 1	200 µL
Wash2_Pos3	DW 96 plate, V-bottom	Wash buffer TN 2	200 µL
Wash3_Pos4	DW 96 plate, V-bottom	Ultrapure water	200 µL
Elution_Pos5	KingFisher 96 KF plate	Elution buffer TN	70 µL

**Table 2:** Plate filling instructions for KingFisher 96 and sbx\_tissue\_KF96 protocol.



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