# EUROArray SwiftX-traction

(REF: SXEA-50)

# Instructions for Use

## Content

## Intended use

EUROArray SwiftX-traction is intended to be used for manual extraction of DNA of fungi, bacteria, parasites, viruses and human epithelial cells from skin, hair, nails, culture material, dry swabs, urine, liquid-based cytology media, and FFPE tissue. For professional use only.

## Principles of the method

EUROArray SwiftX-traction is designed for rapid extraction of DNA from various pathogens. The different components of EUROArray SwiftX-traction have specific functionalities within the workflow of DNA extraction.

**Buffer EN** stabilizes biological cells during the cell capturing step and enables efficient binding of a wide range of cells to the paramagnetic particles.

**Buffer EAL** enables an efficient lysis of viruses, bacteria, protozoa, and human cells. Buffer EAL is fully compatible with the EUROArray diagnostic platform.

The use of **Proteinase K** enhances the lysis efficiency of Buffer EAL especially for fungal cells as well as for sample types such as skin, hair, nails, and FFPE tissue.

The paramagnetic particles **Beads A** show a broad binding property to cells and proteins. This effect is leveraged in two ways during the extraction process. Firstly, Beads A enable a species-independent concentration of cells from liquid specimens. Secondly, during and after heat lysis, Beads A are utilized to remove cell debris and other particulate matter from the lysis mixture.

## Content of the kit

Buffer EN
Buffer EAL
Proteinase K
Beads A

## Equipment to be provided by the user

For performance of the nucleic acid extraction procedure, the following laboratory equipment is required and needs to be provided by the user:

- Appropriate personal protective equipment
- Pipets and disposable pipet tips (aerosol barrier tips are recommended)
- 1.5ml microcentrifuge tubes with safe lock-caps (EUROIMMUN, REF: ZG 0614-0101)
- Magnetic stand (EUROIMMUN, REF: ZM 0224-0101)
- Vortexer, Mini spinner
- Heating block

## Storage and shelf life

EUROArray SwiftX-traction kits must be stored at 2 °C to 8 °C. Reagents are good to be used until the expiry date indicated on the label. Do not use reagents after their indicated expiry date.

After first use, EUROArray SwiftX-traction kits are good to be used within 3 months.

## Warnings and precautions

EUROArray SwiftX-traction comprises a Proteinase K solution, which is considered a hazardous substance. The Safety Data Sheet (SDS) is available upon request. The following hazard and precaution statements apply:

**Proteinase K**:

**Danger.**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| P264 | Wash respective body parts after accidental contact. |
| P280 | Wear protective gloves, eye, and face protection. |

Take care when working with biological samples and always treat them as potentially infectious. Users are advised to always wear appropriate personal protective equipment.

Be aware that the sample mixture remains potentially infectious until the heat lysis is conducted. Consequently, supernatants of cell capturing and washing steps must be treated as such.

Nucleic acid extracts can be disposed off with regular laboratory waste. Please take your national regulations for waste sorting and treatment into consideration.

Make sure to work with clean equipment and use pipette tips with aerosol barriers to avoid carryover of specimens or nucleic acid extracts between samples.

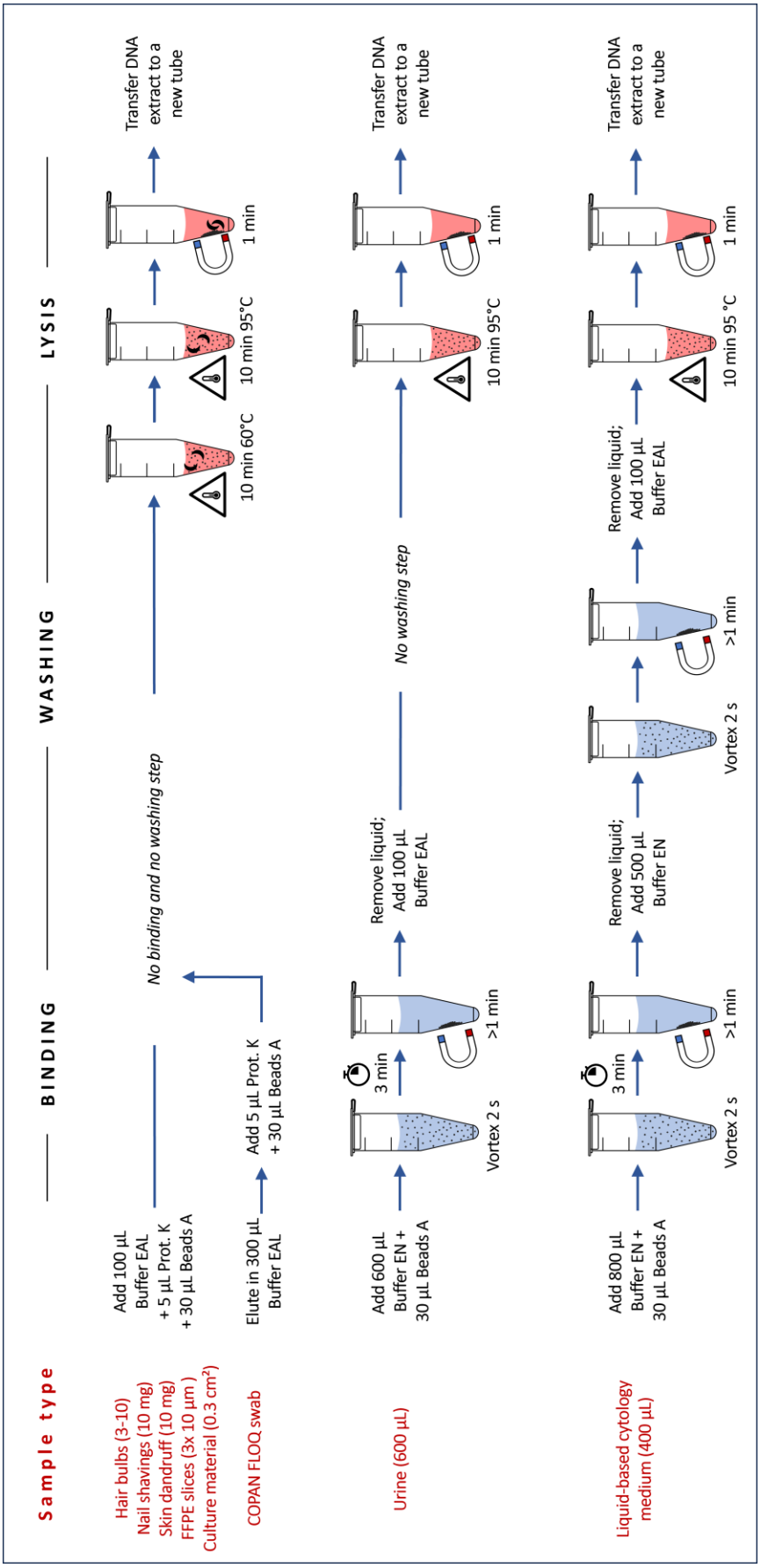
## Sample types and their collection, handling, and storage

EUROArray SwiftX-traction has been validated for the following sample types:

| Sample type | Recommended amount |
|---|---|
| Skin dandruff | approx. 10 mg |
| Hair bulbs | 3 to 10 |
| Nail shavings | approx. 10 mg |
| FFPE tissue | three 10 µm-slices |
| Culture material | approx. 0.3 $cm^2$ (avoid transfer of any culture medium) |
| Dry COPAN FLOQ swab | 1 |
| Urine | 600 µL |
| Liquid-based cytology medium | 400 µL |

For sample collection, handling, and storage, please refer to the Instructions for Use of EUROArray Dermatomycosis, EUROArray HPV, and EUROArray STI.

## Overview of sample-specific extraction procedures



## DNA extraction from solid specimens

This protocol describes the workflow of DNA extraction from skin, hair, nail, dry swabs, culture material, and FFPE tissue. See section Sample types for more information.

**To do before starting**

- Set the heating block to 60 °C.
- If available, set a second heating block to 95 °C.
- Shake or vortex Beads A for 30 seconds to homogenize the particle suspension.

1. **Place your sample material in a 1.5 mL microtube with safe lock-cap.**

2. **The volume of Buffer EAL is selected depending on the sample material to be extracted:**

    a. **Dry COPAN FLOQ swab:** add 300 µL of Buffer EAL to the microtube and elute swabbed material by swirling against the tube wall for 10 seconds and dispose of the swab.

    b. **All others:** add 100 µL of Buffer EAL to the microtube.

    **Important:** If culture material is extracted then avoid the carry-over of culture medium into the microtube.

3. **Add 5 µL of Proteinase K and 30 µL of Beads A and vortex for 2 seconds. Ensure all liquid is collected at the bottom of the microtube. Spin the microtube briefly if necessary.**

4. **Incubate microtube in a heating block at 60 °C for 10 minutes. Samples can be shaken if a thermo-shaker is used.**

5. **Incubate microtube in a heating block at 95 °C for 10 minutes. Samples can be shaken if a thermo-shaker is used.**

6. **Remove microtube from heating block and mix well for 2 seconds. Remove condensate from the lid by spinning the tube briefly.**

7. **Place microtube in a magnetic stand for 1 minute.**

8. **Do not remove the microtube from the magnetic stand! Use the supernatant directly for the EUROArray analysis or transfer to a new microtube.**

    **Important:** If FFPE samples are extracted, use a pipette tip to remove the thin wax layer on top of the lysate and dispose of the tip before transferring the supernatant.

    Extracts can be stored for up to 7 days at 4 - 8 °C or up to 4 weeks at -20 °C.

    **Note:** If DNA samples are not directly used, mix them by 2 seconds vortexing before use for EUROArray analysis.

## DNA extraction from urine

This protocol describes the workflow of DNA extraction from urine. This protocol includes a cell binding step before the actual DNA extraction.

**To do before starting:**

- Set the heating block to 95 °C.
- Shake or vortex Beads A for 30 seconds to homogenize the particle suspension.

1. **Add 600 µL of Buffer EN and 30 µL of Beads A to a 1.5 mL microtube with safe lock-cap.**
2. **Add 600 µL of urine and mix well by pipetting up and down or by vortexing for 5 seconds. Ensure that no liquid is resting at the tube lid.**
3. **Incubate microtube at room temperature for 3 minutes.**
4. **Place microtube in a magnetic stand for 1 minute.**
5. **Open the microtube while remaining in the magnetic stand. Remove and discard the supernatant by pipetting.**
6. **Add 100 µL of Buffer EAL to the microtube and resuspend the Beads A by vortexing for 5 seconds. Ensure all liquid is collected at the bottom of the tube.**
7. **Incubate microtube in a heating block at 95 °C for 10 minutes. Samples can be shaken if a thermo-shaker is used.**
8. **Remove microtube from heating block and mix well for 2 seconds. Remove condensate from the lid by spinning the tube briefly.**
9. **Place microtube in a magnetic stand for 1 minute.**
10. **Do not remove the microtube from the magnetic stand! Use the supernatant directly for the EUROArray analysis or transfer to a new microtube.**

    Extracts can be stored for up to 7 days at 4 - 8 °C or up to 4 weeks at -20 °C.

    **Note:** If DNA samples are not directly used, mix them by 2 seconds vortexing before use for EUROArray analysis.

## DNA extraction from liquid-based cytology media

This protocol describes the workflow of DNA extraction from liquid-based cytology media (LCM), such as ThinPrep or PreserveCyt. This protocol includes a cell binding step before the actual DNA extraction.

**To do before starting**

- Set the heating block to 95 °C.
- Shake or vortex Beads A for 30 seconds to homogenize the particle suspension.

1. **Add 800 µL of Buffer EN and 30 µL of Beads A to a 1.5 mL microtube with safe lock-cap.**
2. **Add 400 µL of LCM and mix well by pipetting up and down or by vortexing for 5 seconds. Ensure that no liquid is resting at the tube lid.**
3. **Incubate microtube at room temperature for 3 minutes.**
4. **Place microtube in a magnetic stand for 1 minute.**
5. **Open the microtube while remaining in the magnetic stand. Remove and discard the supernatant by pipetting.**
6. **Add 500 µL of Buffer EN and mix well by pipetting up and down or by vortexing for 2 seconds. Ensure that no liquid is sitting at the tube lid. Spin the tube briefly if necessary.**
7. **Place microtube in a magnetic stand for 1 minute.**
8. **Open the microtube while remaining in the magnetic stand. Remove and discard the supernatant by pipetting.**
9. **Add 100 µL of Buffer EAL to the microtube and resuspend the Beads A by vortexing for 5 seconds. Ensure all liquid is collected at the bottom of the tube.**
10. **Incubate microtube in a heating block at 95 °C for 10 minutes. Samples can be shaken if a thermo-shaker is used.**
11. **Remove microtube from heating block and mix well for 2 seconds. Remove condensate from the lid by spinning the tube briefly.**
12. **Place microtube in a magnetic stand for 1 minute.**
13. **Do not remove the microtube from the magnetic stand! Use the supernatant directly for the EUROArray analysis or transfer to a new microtube.**

    Extracts can be stored for up to 7 days at 4 - 8 °C or up to 4 weeks at -20 °C.

    **Note:** If DNA samples are not directly used, mix them by 2 seconds vortexing before use for EUROArray analysis.

## Limitations

- Transport media with high content of salts, e.g. guanidine hydrochloride, such as eNAT® are not compatible with EUROArray SwiftX-traction.

## Literature references


- Grody WW, Nakamura RM, Strom CM, Kiechle FL (2010). "Molecular Diagnostics: Techniques and Applications for the Clinical Laboratory". ISBN 978-0-12-369428-7.
- Shalon *et al.* (1996) "A DNA microarray system for analyzing complex DNA samples using two-color fluorescent probe hybridization". Genome Res. 6 (7): 639–645.
- Gräser Y, Czaika V, Ohst T (2012) "Diagnostic PCR of dermatophytes – an overview". J Dtsch Dermatol Ges 10: 721-726.
- Munoz *et al.* (2003) "International Agency for Research on Cancer Multicenter Cervical Cancer Study Group. Epidemiologic classification of human papillomavirus types associated with cervical cancer". N Engl J Med 348 (2003) 518-527.
- World Health Organization: Laboratory diagnosis of sexually transmitted infections, including human immunodeficiency virus. 2013.

## Key to symbols

| | |
|---|---|
|  | Catalog number |
|  | Number of extractions |
|  | Storage temperature |
|  | Batch number |
|  | Expiry date |
|  | Read Instructions for Use |
|  | Legal manufacturer |

## Legal manufacturer:

**Xpedite Diagnostics GmbH**
Lilienthalstr. 2a
85399 Hallbergmoos
Germany

Phone: +49-811-998538-10
E-Mail: info@xpedite-dx.com
Web: www.xpedite-dx.com