SwiftX™ Hi-Sense

Handbook

Content

Storage

SwiftX™ Hi-Sense must be stored **at 2-25°C** and can be used until the expiry date indicated on the labels.

Product Use

For Research Use Only.

SwiftX™ Hi-Sense is designed for sensitive and rapid extraction of DNA from bacteria and viruses as well as genomic DNA from liquid human or animal samples that contain low numbers of cells and virus particles such as saliva, urine and swabs in transport media (e.g. oral, nasal, and environmental swabs).

The procedure can be performed manually as well as in an automated fashion. Automation of the nucleic acid extraction protocol is possible with a variety of robotic pipetting and handling systems due to its minimal number of working steps. Any adaptation has to be performed and validated by the user.

Safety information

SwiftX™ Hi-Sense comprises of two buffers (Buffer EN and DL) and magnetic particles (Beads B). All components of the kit are free of hazardous substances. The safety data sheets (SDS) for SwiftX™ Hi-Sense components are available upon request.

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

Quality control

Each batch of SwiftX™ Hi-Sense is tested against defined specifications to ensure consistent product quality. A Certificate of Analysis can be provided upon request.

Equipment to be provided by the user

- Appropriate personal protective equipment
- Pipets and disposable pipet tips (aerosol barriers recommended)
- 1.5mL and 2mL microcentrifuge tubes (safe-lock-caps or screw-caps recommended) or a deep-well plate
- Magnetic stand, e.g. *Xpedite Diagnostics MagRack 12* (cat.no. MAG-12)
- Vortexer
- Heating device (water bath, heating block, or thermo shaker)

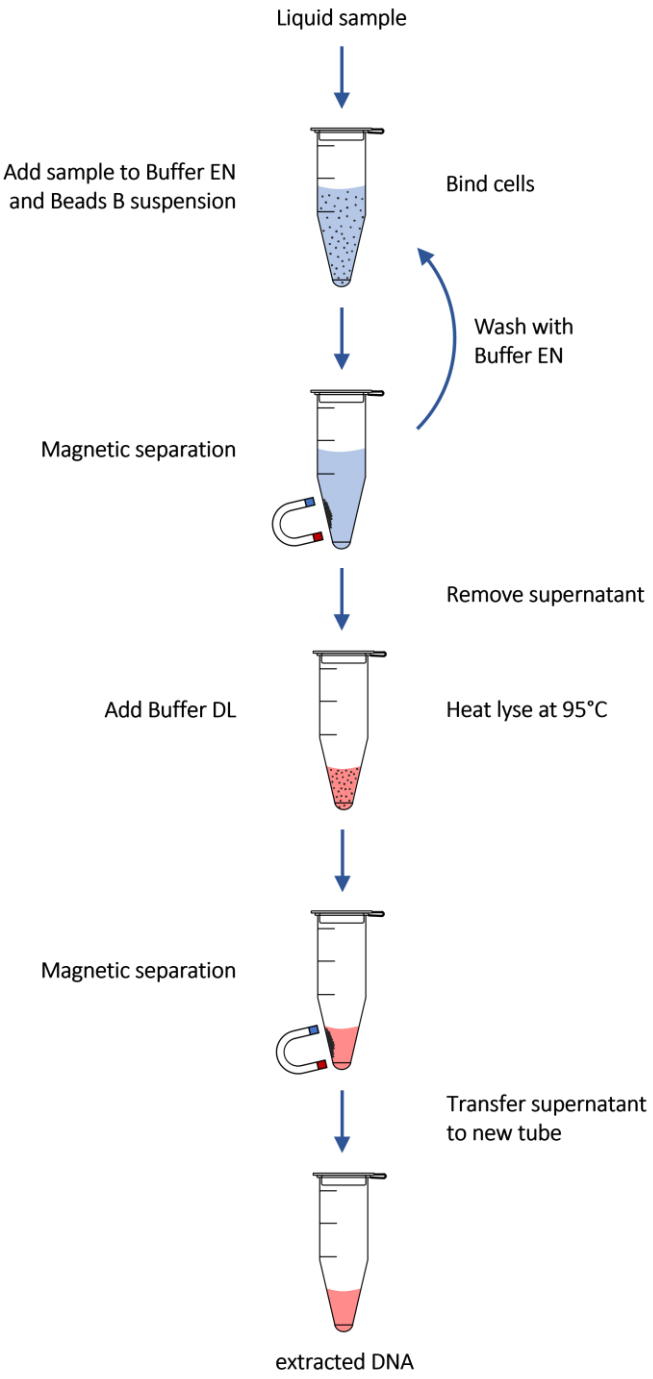
Principles

Buffer EN stabilizes viruses, bacteria and host cells such as epithelial cells, white blood cells, during the cell capture step and enables efficient binding of biological cells to the magnetic particles.

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

In conjunction with application of heat, **Buffer DL** enables an efficient lysis of viruses, bacteria, and human/animal cells. Buffer DL is fully compatible with a wide range of amplification chemistries.

Graphic representation of the cell capturing and the DNA extraction procedure



DNA extraction procedure

To do before starting

- ***Read the complete protocol.***
- Heat a water bath, heating block, or thermal shaker to 95°C.
- Shake or vortex Beads B for 30 seconds to ensure homogeneous suspension.

1. **Add 30µL of Beads B to a 1.5mL microcentrifuge tube.**
2. **Add 700µL of Buffer EN to the same tube. Mix well by pipetting up and down.**
3. **Add 1mL of liquid sample to the tube. Mix well by pipetting up and down or by vortexing or inverting the tube for 10 seconds.**
4. **Incubate sample tube at room temperature for 3 minutes.**
5. **Place sample tube into a magnetic stand and let the magnetic particles separate at room temperature for 1 minute.**
6. **Open the lid while the tube remains in the magnetic stand. Remove the supernatant by pipetting. Discard the supernatant.**
7. **Add 500µL of Buffer EN to the tube and remove the tube from the magnetic stand. Resuspend the magnetic particles by vortexing or shaking for 10 seconds.**
8. **Place sample tube into a magnetic stand and let the magnetic particles separate at room temperature for 1 minute.**
9. **Open the lid while the tube remains in the magnetic stand. Remove the supernatant by pipetting. Discard the supernatant.**
10. **Add 75µL of Buffer DL to the tube and remove the tube from the magnetic stand. Resuspend the magnetic particles by vortexing or shaking for 10 seconds.**
11. **Incubate lysis mixture at 95°C for 10 minutes. If a thermal shaker is used, shake at maximum speed.**
12. **Remove sample tube from heating device and mix well for 5 seconds. Remove condensate from the lid before opening by shaking down or tapping the tube on the work bench.**

13. **Place sample tube into a magnetic stand and let the magnetic particles separate at room for 1 minute.**

14. **Open the lid while the tube remains in the magnetic stand. Transfer the supernatant into a new tube for storage or use in downstream applications.**

DNA extracts can be stored at -20°C if samples shall be processed later.

Contacts and disclaimer

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This product may be used solely in accordance with the provided protocol. Every step deviating from this protocol must be validated by the user.

This product shall not be reused or resold without license by Xpedite Diagnostics.