

## Exposome project for health and occupational research

### Protocols for collection, pre-processing and storage of biological samples (WP3, Task 3.1)

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Project start date: Jan 1st 2020	Duration: 60 months
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WP (number and title)	WP3- Internal exposure and effect assessment using biomonitoring, omics and minimally invasive biomarker development
Deliverable Number	D3.1
Deliverable Title	Protocol for the collection, pre-processing and storage of biological samples in WP6, WP7
Due date	Month 6
Actual date	
Dissemination Level	PU: Public

Lead beneficiary	6 - KUL
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## Collection, pre-processing and storage of exhaled breath aerosols

### Introduction

Exhaled breath analysis will be performed for both WP6, as part of the asthma/COPD short-term study, and WP7, as part of the working-life exposome study in shift workers. Non-volatile breath targets captured can be analyzed using LC-MS and/or ELISA.

A panel of volatile and non-volatile compounds on breath related to mechanisms such as oxidative stress and inflammation makes up the core of the analysis, while discovery analysis will be performed on the collected data to identify new potential compounds which correlate occupational exposures.

The protocol for exhaled breath aerosols is currently under development and is likely to be subject to change.

### Materials needed

Collection:	-Single-use exhaled breath aerosol collection device -Dymo barcode label printer -Barcode scanner -Barcode labels (linking participant ID, date and time of sampling to the participant's electronic case report form) -Laptop with supplied software -Electronic case report form (eCRF): the software on the supplied laptop has an in-built eCRF which requires several basic questions to be answered (see annex 1)
Pre-processing:	Not required
Storage:	-Freezer (-80 °C)

### Collection of exhaled breath aerosols

Participants are asked to refrain from eating, drinking (except for water), smoking or brushing their teeth for 1 hour prior to sampling.

The device is labeled.

The plastic protective cover is removed from the sampling device

The caps are removed from the sampling device

The participant takes a deep breath before exhaling into the sampling device, through the large opening. This is then repeated 12 times before putting the caps back on.

### Pre-processing and storage of exhaled breath aerosols at site of collection

Pre-processing is not required.

After collection, the single-use exhaled breath aerosol collection device should be stored at -80 °C.

