Breath Biopsy: VOC Biomarkers for Disease

Exhaled breath contains thousands of Volatile Organic Compounds (VOCs). As products of underlying metabolic processes, VOCs directly reflect actual disease activity and represent a goldmine of biomarkers accessible via a non-invasive Breath Biopsy.

The clinical applications for breath-based VOC biomarkers include early detection, as well as precision medicine applications such as patient stratification, monitoring of therapy response and monitoring of disease activity.

- Reliable, reproducible breath collection for VOC biomarker analysis
- High patient safety and comfort
- Includes CASPER Portable Air Supply to minimize contamination of breath samples by external VOCs
- Used in conjunction with Breath Biopsy Kits containing Breath Biopsy Cartridge and Mask
- In use in the world’s largest breath-based clinical trials, at over 100 clinical sites around the world

Whole Body Sampling via Breath

Rapid transfer of VOCs from blood to breath

Once every minute, your entire blood volume circulates around your body. The lungs efficiently exchange VOCs between blood and air.

The ReCIVA Breath Sampler continuously collects breath for up to 10 minutes, pre-concentrating the VOCs on a Breath Biopsy Cartridge. This enables you to:

- Detect breath biomarkers with unparalleled sensitivity
- Detect breath biomarkers relevant for diseases occurring throughout the body

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High Quality, Reproducible Breath Samples

Reproducible collection of breath samples free from contamination is essential for robust biomarker discovery.

- Standardized breath collection parameters, e.g. breath volume, fraction, flow rate
- Conditioned and QC checked Breath Biopsy Cartridges and Masks
- CASPER Portable Air Supply minimizes contamination from external VOCs

Reliable measurements can be achieved using the Breath Biopsy platform as demonstrated in this study monitoring the change in concentration of breath metabolites over time.

Easy, Comfortable Breath Collection

During sampling, patients breathe comfortably using normal tidal breathing. ReCIVA monitors the patient’s breathing pattern in real time using CO$_2$ and pressure sensors, triggering pumps to collect VOCs onto the Breath Biopsy Cartridge.

ReCIVA’s software interface enables collection volume, flow rates and breath fraction (e.g. enriched bronchial, end tidal) to be selected independently for each pair of VOC sample tubes, allowing two different measurements in a single collection.

Breath Biopsy Products and Services

Send Breath Biopsy Cartridges for analysis using Owlstone Medical’s Breath Biopsy Services

owlstonemedical.com/services

OR

Analyze Breath Biopsy Cartridges in your own lab with the Lonestar VOC Analyzer

owlstonemedical.com/lonestar

Lease ReCIVA Breath Sampler and purchase Breath Biopsy Kits to collect breath samples

owlstonemedical.com/breath-biopsy-kits