

## Biological Sample Pretreatment Kit

# Micro Volume QuEChERS Kit



This pretreatment kit for human biological samples is intended for the field of forensic medicine. Salt precipitation via QuEChERS extraction salts is adopted as the method\* for extracting toxicants in blood and urine. The sample volume has been scaled down to 100  $\mu\text{L}$ , so biological samples can be pretreated even if an ample sample volume cannot be ensured. Samples pretreated with this kit can be measured with high sensitivity using LC/MS/MS.

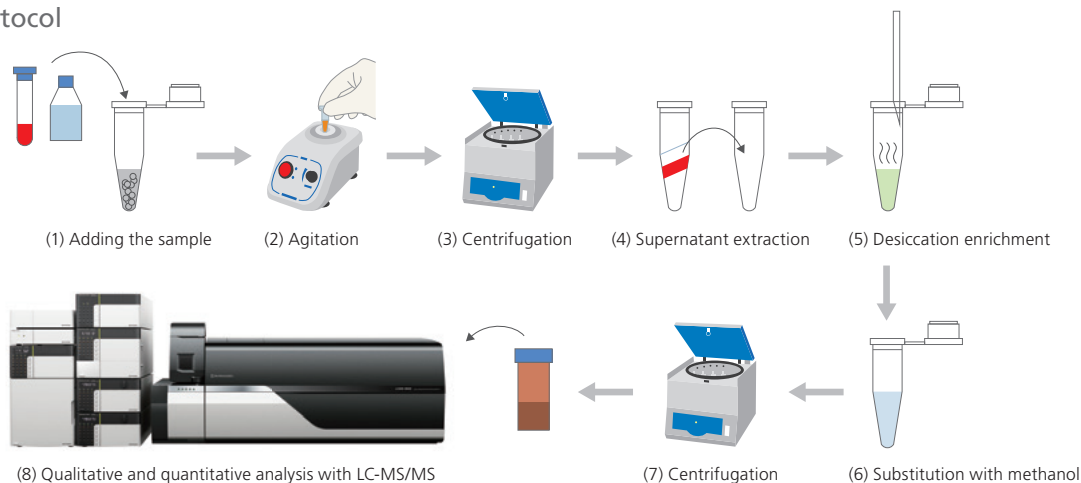
\*: A patent application has been submitted for this technology.

### Ready-to-Use Pretreatment Kit

A 2.0 mL tube in the Micro Volume QuEChERS Kit contains the QuEChERS extraction salts (100 mg), which eliminates the need to weigh out the QuEChERS extraction salts. As a result, if an urgent analysis is required, samples can be pretreated quickly by following the workflow shown below. Additionally, this eliminates variance in QuEChERS extraction salt volumes due to manual processing, resulting in data with high reproducibility.

### Pretreatment Protocol

Biological sample: 100  $\mu\text{L}$   
Water: 200  $\mu\text{L}$   
ACN: 300  $\mu\text{L}$



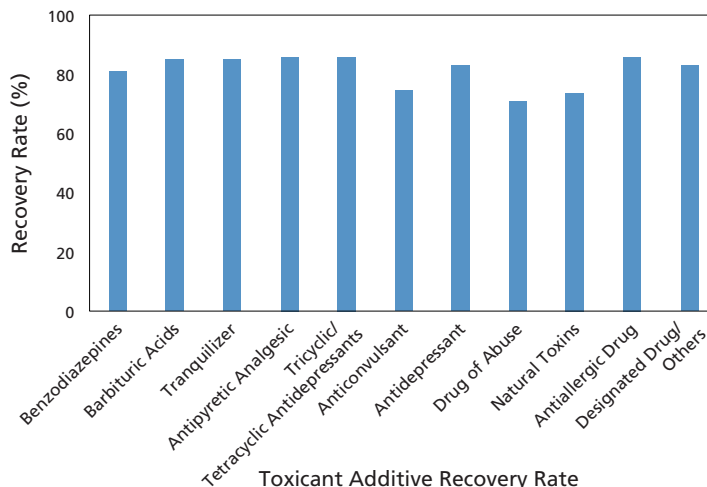
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## Example of Use: Toxicant Additive Recovery Test

Using the Micro Volume QuEChERS Kit, an additive recovery test was implemented for the main toxicants in whole human blood. The measurements were performed by LC/MS/MS using the HPLC and MS conditions registered in the LC/MS/MS Rapid Toxicology Screening System Ver.2. Favorable results were obtained in this experiment, with recovery rates\* for all compounds ranging from 71% to 86%. Using the Micro Volume QuEChERS Kit, impurities can easily be removed, enabling the efficient recovery of a wide range of compounds without loss.

\* The recovery rate is calculated using the following formula.

$$\text{Recovery rate} = (\text{Area for the pre-added compound}) / (\text{Area for the post-added compound}) \times 100$$



These data were obtained from Associate Professor Kei Zaitzu and Kengo Matsumoto, Department of Legal Medicine and Bioethics, Nagoya University.

## Product Specifications

Item	Specifications
Applicable Samples	Whole blood, urine and other biological samples
Use Cycles	Once/pc.
Sample Volume	100 µL
Quantity	100 pc.



100 pc.

## Product Configuration (per pc.)

Item	Volume	Remarks
QuEChERS Extraction Salt	100 mg	As per AOAC 2007.01 Magnesium sulfate: 80 mg Sodium acetate: 20 mg

Note) When storing this product, avoid direct sunlight as well as high temperatures and high humidity.

For the analysis conditions, refer to the LC/MS/MS Rapid Toxicology Screening System Ver.2 and the LC/MS/MS Forensic Toxicological Database.

## Cautions

1. This product is for research purposes only. It cannot be used for clinical diagnostic applications.
2. Shimadzu assumes no responsibility for any damages incurred directly or indirectly from the use of this product. The customer assumes responsibility for the results and phenomena arising from its use. Additionally, note that the usefulness of information obtained from using this product cannot be guaranteed.



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