



## Preparation of honey samples for analysis

Honey, as a natural product, is a pure food source that is good for our health. However, the widespread use of crop protection agents, antibiotics and other such products means that honey may contain substances that have an adverse impact on its quality or which can even be a potential health risk for humans. Honey is therefore subject to a wide range of analyses for quality assurance purposes and to protect consumers.

Despite the large number of parameters that are included in the analyses, the initial treatment of the honey is generally the same: The honey samples are taken from their containers and divided into aliquots. Extraction is then carried out and the extracts sent for analysis.

Laboratory centrifuges are used during the extraction procedure. A solvent is added to the sample and the substance to be detected enters the solvent and is separated from the other constituents of the sample through the centrifugation procedure. The supernatant is removed by pipette and analysed.

## Advantages of the Hettich method

### 1. Combining centrifugation and freezing in a single step saves time and labour

The freezing process results in the sediment being fully or partially frozen so that the supernatant can be more easily removed, and in particular quantitatively. Until now it was necessary to freeze the sample after the centrifugation step. The coupled high-performance cooling unit and state-of-the-art control of the ROTINA 380 R centrifuge enable centrifugation and freezing to be carried out as a single step at reduced speed. Depending on the approach, the sediment can be fully frozen and the supernatant derived quantitatively through simple decanting.

### 2. Space is saved as well, since there is no need to store the samples in a freezer

### 3. Greater accuracy of the results

The accuracy of the results is greater, since we have eliminated the difficult-to-reproduce step whereby the supernatant is removed by a pipette.

## Preparation<sup>1)</sup>

### 1. Preparation of the sample

1 ml of the honey sample is first mixed with 1 ml tap water at room temperature. 5 ml acetonitrile is then added and mixing repeated.

**Important:** The tubes must be closed and the safety instructions followed for the handling of acetonitrile!

### 2. Centrifugation

#### Program 1 (pre-cooling)

The pre-cooling program PREC (Program number 99) is used to cool the centrifuge to -20 °C before use.

#### Program 2 (sedimentation)

The samples are then centrifuged for **5 minutes** at **2,540 x g** (corresponding to 4,000 min<sup>-1</sup> with angle rotor No. 1721) at a temperature of -20 °C.

#### Program 3 (phase separation)

Program 2 is followed automatically by program 3. In this program the samples are centrifuged for a further 45 minutes at **1,000 min<sup>-1</sup>** at a temperature of -20 °C. Both the start-up and braking ramp are set to the highest value of 9.

## Ordering information

Centrifuge	Cat. No.
ROTINA 380 R	1706

Selection of accessories	Cat. No.
8-place angle rotor, max. capacity 32 x 15 ml	1721
Adapter, 4-place, for 15 ml tubes	1467
Insert for conical 15 ml tubes	E2109

<sup>1)</sup> in conjunction with APPLICA GmbH, Bremen