Extraction of polar compounds from groundwater by comparing SPE and evaporation techniques followed by HRMS DIA acquisition

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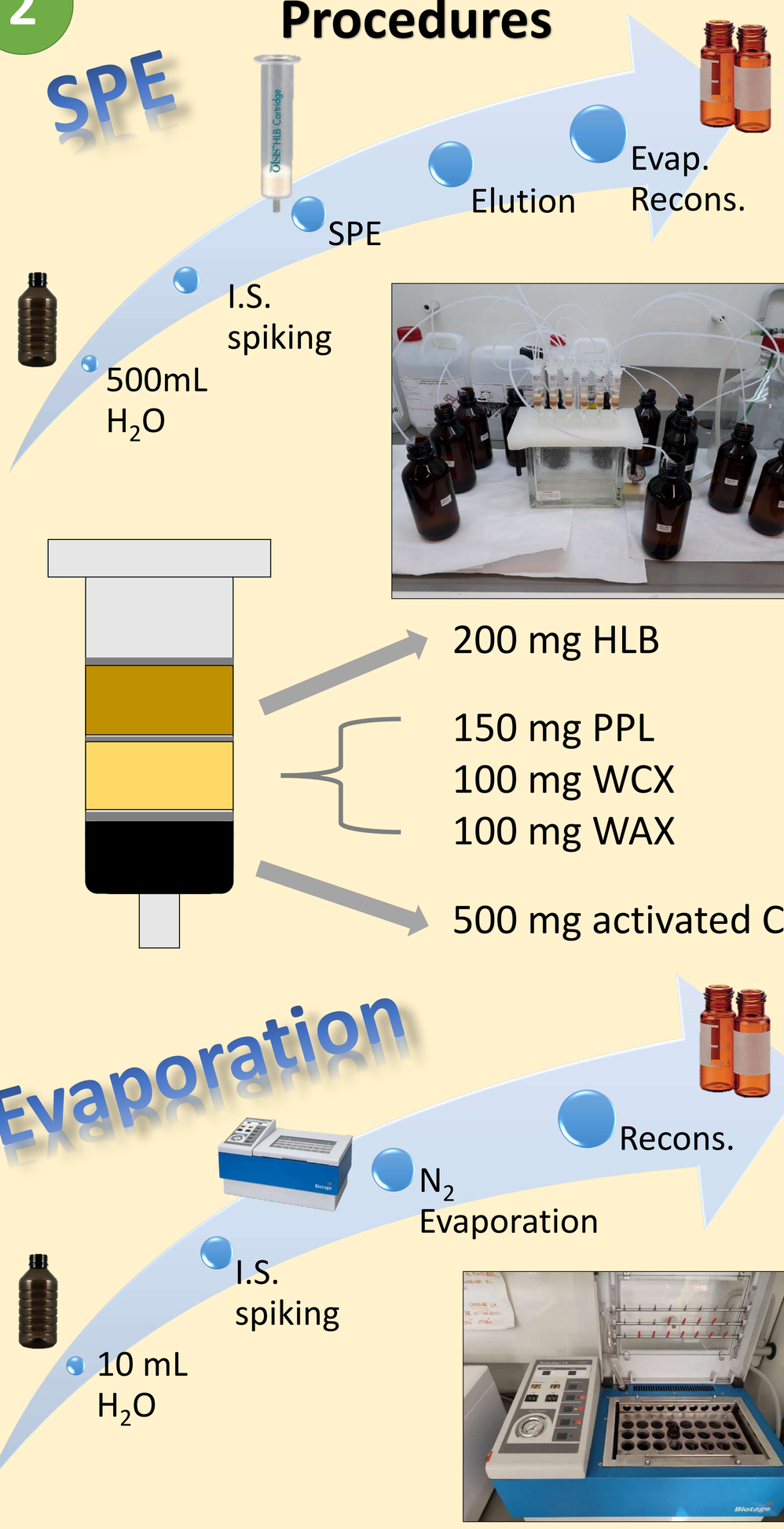
1 Background

- The exponentially population growth have led to an overexploitation of drinking water. Thus, new strategies for obtaining drinking water have to be employed.
- Groundwater might meet the necessary conditions. However several organic pollutants could reach it by storm runoff, sewer leaks and infiltration from soil.

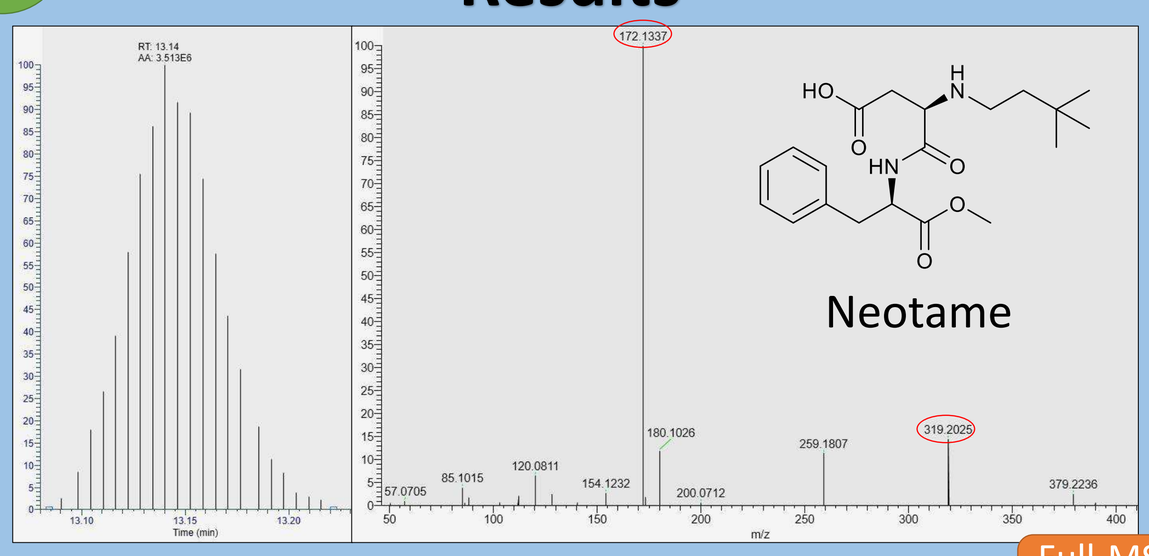
The Challenge

- The polar affinity between water and polar contaminants makes obtaining clean extracts difficult.
- Here, 35 polar compounds (logP < 0) were analyzed after selecting the extraction method (SPE or Evaporation) providing higher recoveries results.

2 Procedures



3 Results



The selection of the extraction method was made taking in consideration its performance (recoveries), but also the time required and the total cost.

HR-MSMS Analysis

Instrumentation

Thermo Scientific Q-Exactive ORBITRAP

Acquisition Method:

Full-MS + DIA with retention time micro-windows

Data analysis

Qualitative and quantitative analysis was performed using Thermo TraceFinder Software 5.1

4 NEXT STEPS

- Barcelona samples will be analyzed using the validated method in order to **quantify** the **polar compounds** studied.
- A **suspect-screening** will be performed to search for **metabolites**.
- Method will be exposed to an **extension** of **contaminants** of study.

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