

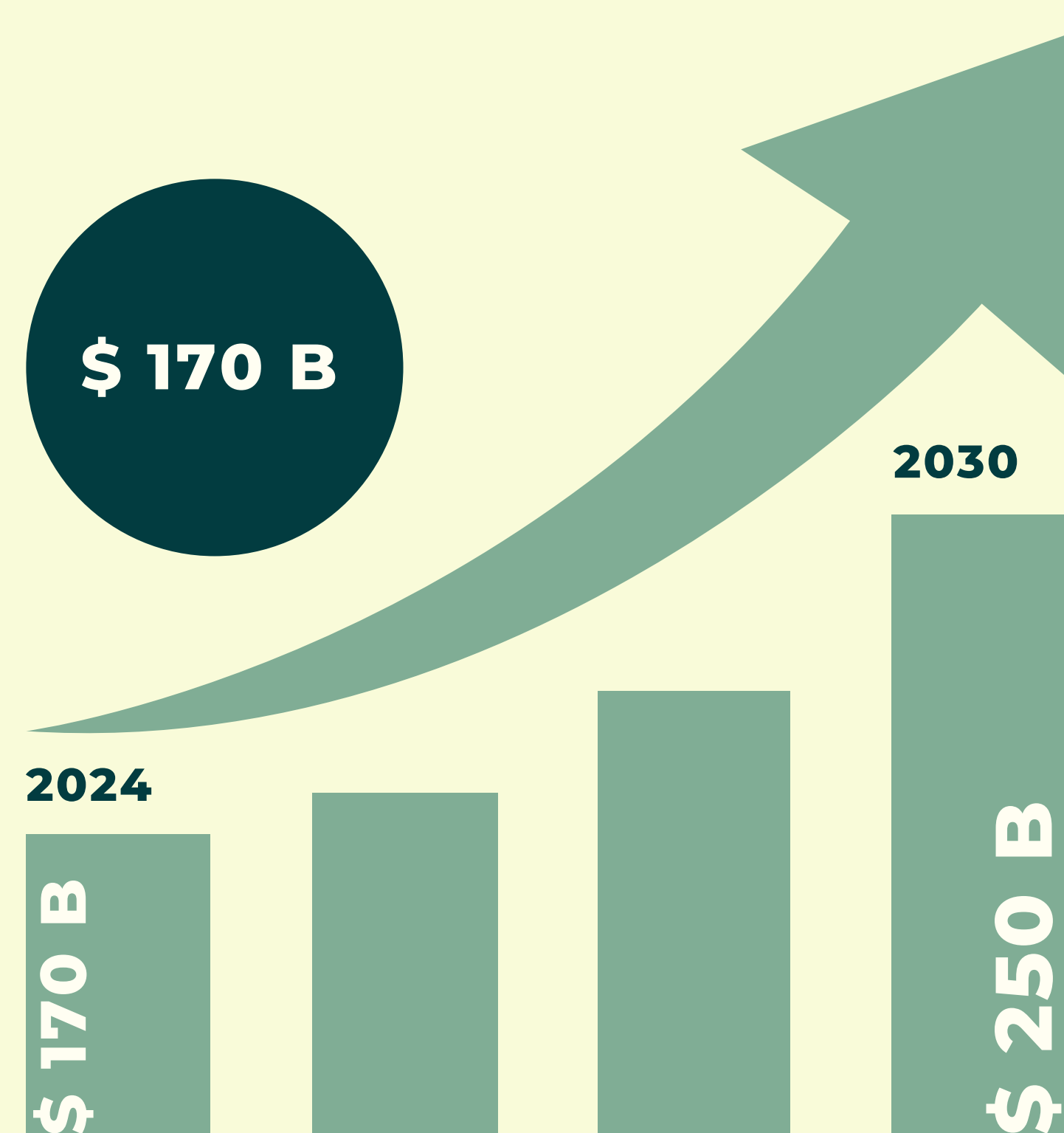
NON-TARGETED METABOLOMICS: A TOOL FOR ASSESSING PLANT FOOD SUPPLEMENT AUTHENTICITY

Hilva Gjoni (hilva.gjoni@unipr.it)

Dept. of Food and Drug, University of Parma, Parma, Italy

Tutor: Prof. Chiara Dall'Asta

BACKGROUND



AIM

The main aim of this PhD project is to develop methodologies able to detect the presence of potential adulterants in botanical based food supplements.

WHY FOOD FRAUD?

Increased vulnerability and fraudulent practices caused by:

- Popularity
- Regulatory gaps
- Complex food chains
- Market worth (170 U.S. billion dollars)

OBJECTIVES



METHODOLOGY

1 Experimental design



2 Sample collection



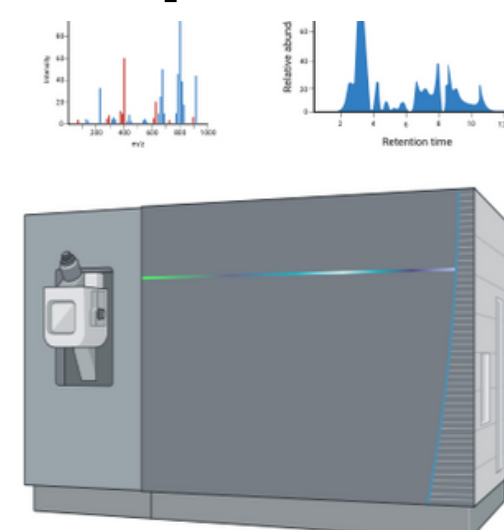
3

Sample treatment

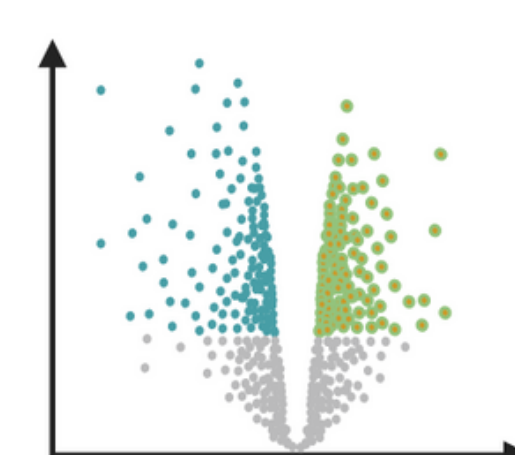


4

Data acquisition

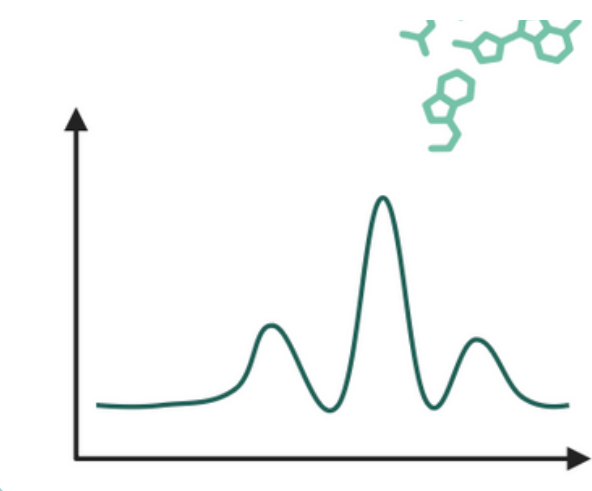


5 Statistical analysis



6

Biomarker identification



7 Predictive model



ACKNOWLEDGEMENTS

Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 1 Investment 3.4 and 4.1 - Call for tender No. 118 of 02/03/2023 of Italian Ministry of University and Research funded by the European Union - NextGenerationEU. This work has been carried out in the frame of the ALIFAR project, funded by the Italian Ministry of University through the program 'Dipartimenti di Eccellenza 2023-2027'.

REFERENCES

- Silano et. al. (2011). Regulations applicable to plant food supplements and related products in the European Union. *Food Funct* 2:710–9.
- Statista (2021). Industries & Markets. Dietary supplements and functional foods worldwide.
- Dou et al. (2023). Mass spectrometry in food authentication and origin traceability. *Mass Spectrom Rev* 42:1772–807.
- Begg PM and Wheatley VM (2021). Chapter 17 - *Fraud in dietary supplements*, Academic Press.