

# Unveiling the Roman Wine: Analyzing the Role of Pitched Ceramics Using Omic Techniques

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**Tematic area:** wine and science

**Keywords:** Amphora wine; Pitch; Volatile; Anthocyanins; Polyphenols.

## Background and objectives:

Nowadays, several wine producers are experimenting with fermentation or ageing in pottery containers, in several countries. Although there is a growing interest, there are few studies on the chemical composition of wines obtained using ancient methods. This study aims to evaluate the impact of pitched amphorae on the winemaking process on wine chemical composition and aromatic profile.

## Methodology:

Vinification was carried out in pottery containers with and without pine pitch coating. Differences in metabolomic profile, anthocyanins and volatile compounds between the “pitched” and “unpitched” wine were evaluated. Analysis was performed on the initial grape juice and the resulting wine. Metabolomic analysis in samples was conducted by UHPLC-ESI-QTOF-MS, anthocyanins by UPLC-DAD and volatile compounds by GC-MS.

## Results and conclusions:

Results showed significant differences in the wines made in with and without the pitch coating. This was seen in the initial must as well as at the end of fermentation. Flavonoid glycosides, trans-Ferulic, Protocatechuic and Gluconic acids decreased in pitch-coated vessels while methoxyphenols and phenylalanine increased. However, anthocyanins tended to increase with pitch coating. As for the volatiles compound, creosol, guaiacol and dehydroabietic acid derivatives were found as markers of the resin in pitched wine.

## Acknowledgements:

Funded by MICIN/AEI/FEDER, UE, RACAMed II (PID2020-113409GB-I00), the ERAAUB (2021 SGR 00696), University of Siena, C.A.-R. is supported by PRE2022-104187, PID2020-114022RB-I00, CIBEROBN, ISCIII from the Ministerio de Ciencia, Innovación y Universidades, (AEI/FEDER, UE). INSA-UB is María de Maeztu Unit of Excellence (CEX2021-001234-M). R.M.L.-R would like to thank the GC the ICREA academia recognition.

## **Summarized Curriculum Vitae**

Clara Abarca Rivas is Food and Nutrition PhD Candidate at Faculty of Pharmacy and Food Sciences, University of Barcelona, Barcelona, Spain.

She is a graduate of the first promotion of Gastronomic Sciences from the University of Valencia. She was awarded with the extraordinary prize of degree. She has been able to develop her multidisciplinary training in areas such restaurant industry, research centers such Fundación Alicia or the Institute of Agrochemistry and Food Technology and the food industry developing ready-to-eat food projects.

In addition, she has been collaborating with the UB-Chartier World Lab chair in the study of how vine biodiversity affects wine aroma and with the group of Wines, aromas and quality factors in the reuse of cava lees and studies around Pa de pages and sourdough.

Currently, she is part of the Polyphenol Research Group, working on the study of the influence of resin on the sensory characteristics and conservation of wine, following ancient practices and the effect of cooking with Extra Virgin Olive Oil (EVOO).