Green-extraction methodologies for recovering bioactive compounds from endemic fruits: Corcolen (*Azara dentata*)

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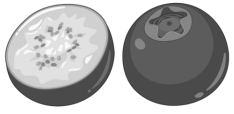
INTRODUCTION

In recent years, more sustainable extraction methodologies are being chosen to reduce environmental impact like supercritical fluid extraction (SFE) and pressurized liquid extraction (PLE). There is a great demand for the recovery of bioactive compounds from endemic fruits which represent a little-explored source of biomolecules that can become potential candidates for the study of new functional foods or nutraceuticals. Some phenolics from Chilean fruits proved to be potential in the prevention of non-communicable- or chronic- diseases, especially for its antioxidant capacity. The study aimed to produce polyphenolic-rich extracts from corcolen (Azara dentata Ruiz & Pav) by non-thermal methodologies.

METHODOLOGY

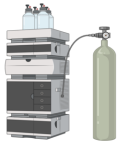
Raw material



Corcolen fruits

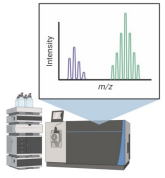
Green-extraction methodologies

Supercritical fluid extraction

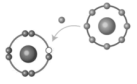


Pressurized liquid extraction

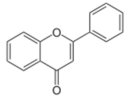
LC-TTOF chromatography



Analysis



Antioxidant capacity (ORAC and TEAC)



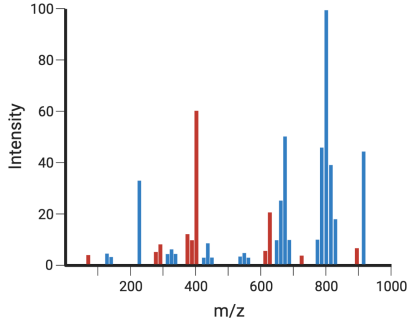
Total Phenolic content (GAE)

Carbohydrates

Proteins

RESULTS

	SFE-EtOH	PLE-Water
Phenols (mg GAE/g)	5,66 ± 0,09	21,17 ± 0,57
ABTS (mg trolox/g)	3,22 ± 0,47	18,05 ± 1,25
Carbohydrates (mg/g)	26,02 ± 0,62	18,64 ± 1,53
Proteins (mg/g)	51,84 ± 2.78	271,9 ± 1,55



Compound	ppb
Chrysoeriol 7-O-glucoside	83,22 ± 1,12
Isorhamnetin 7-O-rhamnoside	86,42 ± 0,78
Isorhoifolin	79,95 ± 0,54
Rhoifolin	77,59 ± 0,33
Kaempferol 3-O-feruloyl-sophoroside 7-O-glucoside	44,81 ± 0,22
Kaempferol 3-O-feruloyl-sophorotrioside	54,54 ± 0,45
Spinacetin 3-O-(2-p-coumaroylglucosyl)(1->6)-apiosyl(1->2)-glucoside	64,17 ± 0,46
Cyanidin 3-O-(-xylosyl--(6-caffeoyl-glucosyl)-galactoside)	44,79 ± 0,54

CONCLUSION

The different extraction methodologies allowed to obtain extracts with an interesting antioxidant capacity and rich in polyphenols, that could potentially find several applications as dietary supplements, ingredients for cosmetic formulations, or additives in food.

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