

INFLUENCE OF ULTRASOUND-ASSISTED EXTRACTION ON PHENOLIC COMPOUND RECOVERY FROM SELECTED MACROALGAE SPECIES

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Introduction

Marine macroalgae are increasingly recognised as sustainable resources and are widely regarded as foods of the future due to their rich nutritional profiles and abundance of bioactive compounds. Consequently, considerable attention has been devoted to developing efficient extraction techniques for the recovery of valuable phytochemicals, such as phenolic compounds. In this study, phenolic compounds were extracted from three macroalgal species (*Ulva lactuca*, *Corallina elongata*, and *Halopteris scoparia*) using high-power ultrasound-assisted extraction (UAE).

Materials and Methods

Results

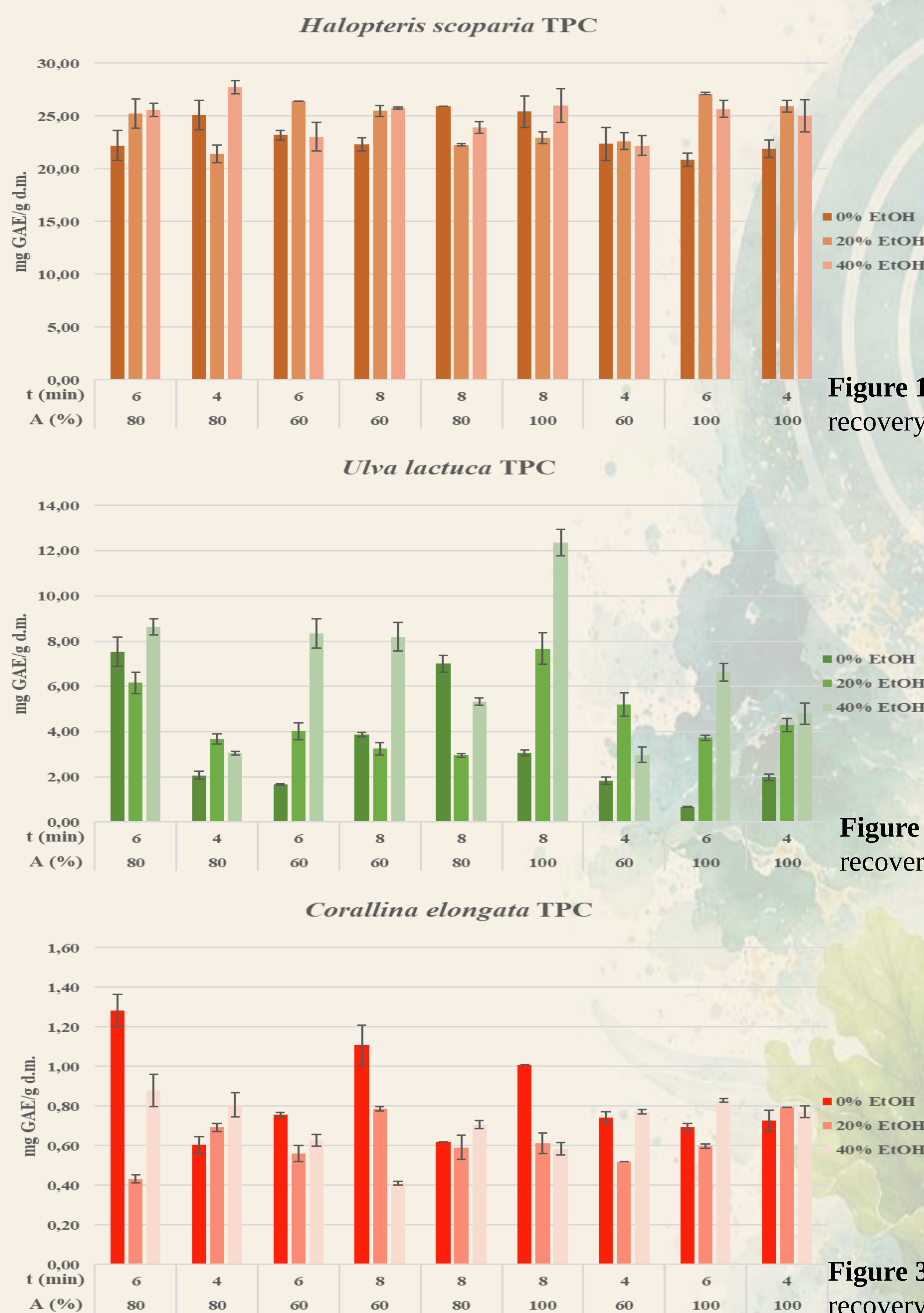
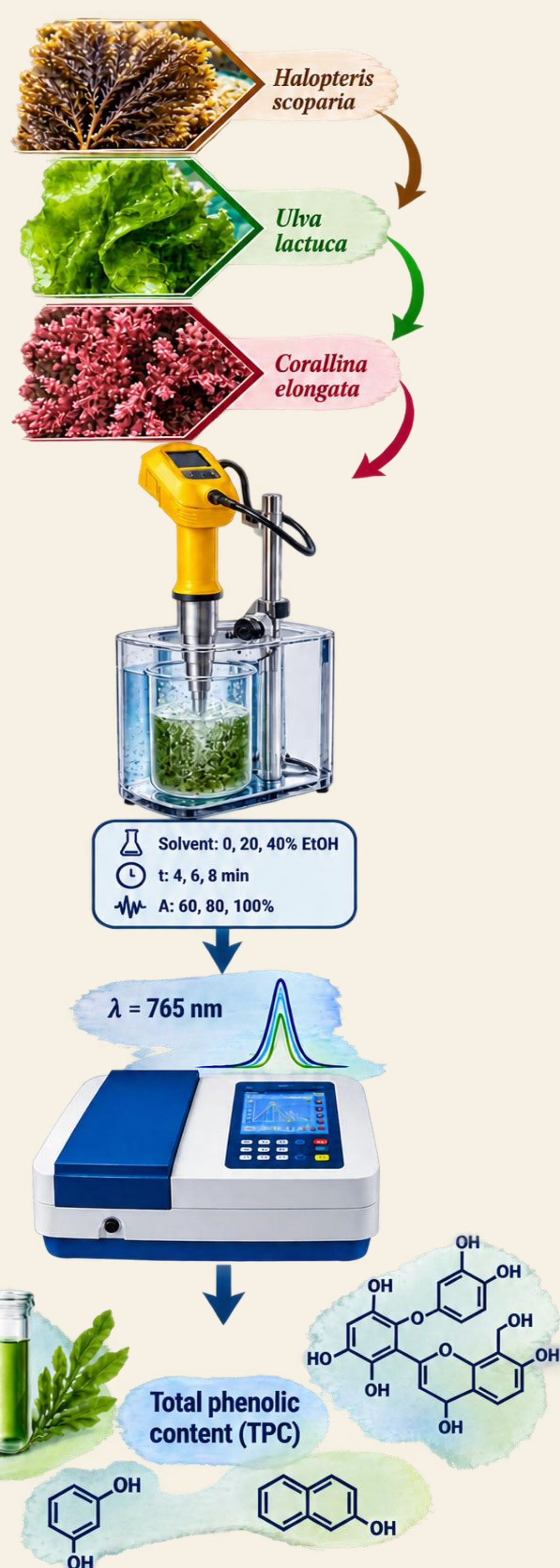


Figure 1. Influence of UAE on TPC recovery from *H. scoparia*

Figure 2. Influence of UAE on TPC recovery from *U. lactuca*

Figure 3. Influence of UAE on TPC recovery from *C. elongata*

Discussion and Conclusion

Considerable differences in TPC were observed among the macroalgae studied. The highest TPC values were recorded in *H. scoparia* extracts (20.89 ± 0.63 to 27.72 ± 0.63 mg GAE/g d.m.), followed by *U. lactuca* (0.68 ± 0.02 to 8.64 ± 0.35 mg GAE/g d.m.), while *C. elongata* exhibited the lowest phenolic yields (0.41 ± 0.01 to 1.28 ± 0.08 mg GAE/g d.m.). These results highlight substantial differences in phenolic recovery among green, red, and brown macroalgae. Therefore, direct comparisons of TPC between these macroalgae should be interpreted with caution due to their different chemical compositions. Nevertheless, such comparisons provide valuable insights into the selection of suitable macroalgal biomass for the recovery of specific bioactive compounds.

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