ECMC-P 2026 Conference

The 2nd International Electronic Conference on Medicinal Chemistry and Pharmaceutics

1–30 November 2026 | Online

MDPI

Natural Strategies for Skin Health: Bioactivity Profiling of Plectranthus Species with Antimicrobial and Skin-Related Enzyme Inhibitory Activities

Vera M.S. Isca[1,2], Rebeca André[1,3], Márcia Filipe[1], Ahmed Hussein[4], Patricia Rijo[1,2,3,5]

[1]CBIOS – Universidade Lusófona's Research Center for Biosciences & Health Technologies, Lisbon, Portugal; [3]Instituto de Investigação do Medicamento (iMed.ULisboa), Faculdade de Farmácia, Universidade de Lisboa,Lisbon, Portugal; [2]Centro de Quimica Estrutural, Institute of Molecular Sciences, Universidade de Lisboa, Lisboa, Portugal; [4] Department of Chemistry, Cape Peninsula University of Technology, Bellville 7535, South Africa; [5] Faculty of Biology and Environmental Protection, University of Lodz, Poland.

INTRODUCTION & AIM

The search for natural products as active ingredients in cosmetics has gained increased interest among the scientific community in recent years. *Plectranthus* is a well-known genus used in traditional medicine for skin conditions. It belongs to the Lamiaceae family and its species are especially distributed in tropical areas of the globe.

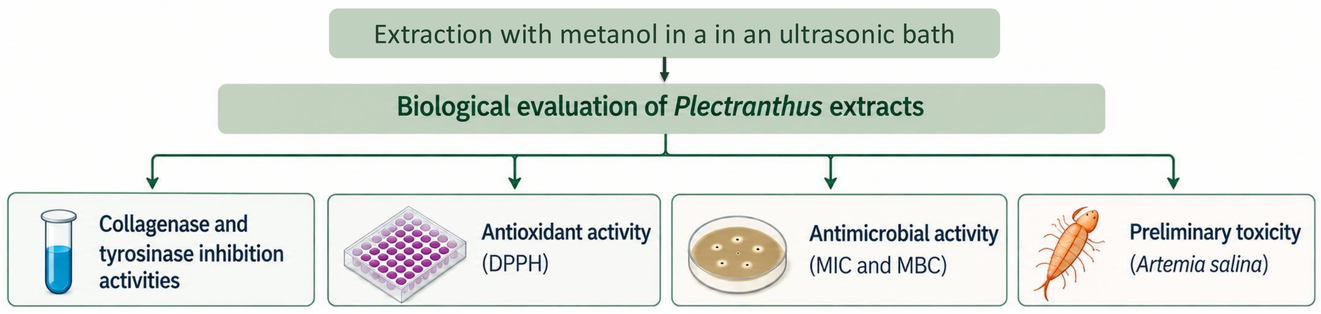
The aim of this work was to evaluated the biological activity of the eight *Plectranthus* spp. cited as traditional used for skin conditions.

METHOD

Eight *Plectranthus* spp. cited as traditional used for skin conditions selected for evaluation:

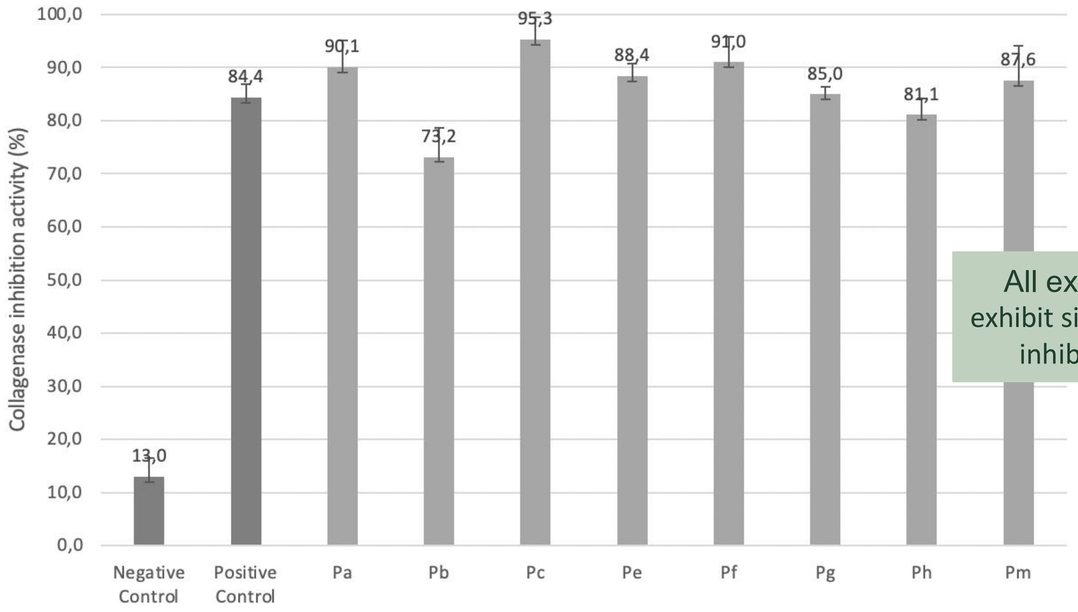


P. ambigerus (Pa) | *P. barbatus* (Pb) | *P. cylindraceus* (Pc) | *P. ecklonii* (Pe) | *P. fruticosus* (Pf) | *P. grandidentatus* (Pg) | *P. hadiensis* (Ph) | *P. madagascariensis* (Pm)



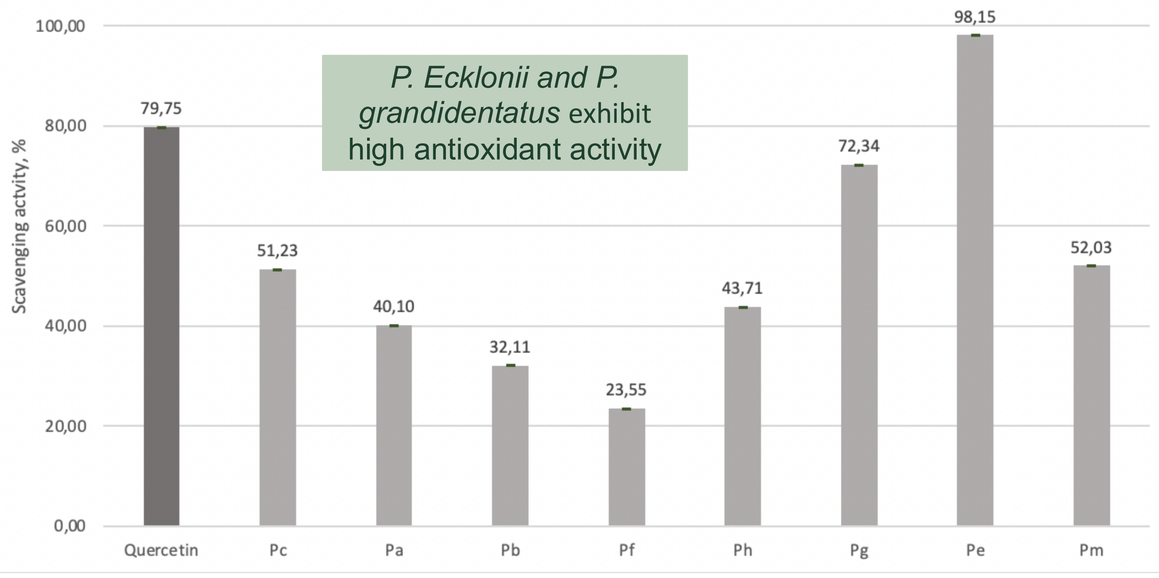
RESULTS & DISCUSSION

Collagenase inhibition activity



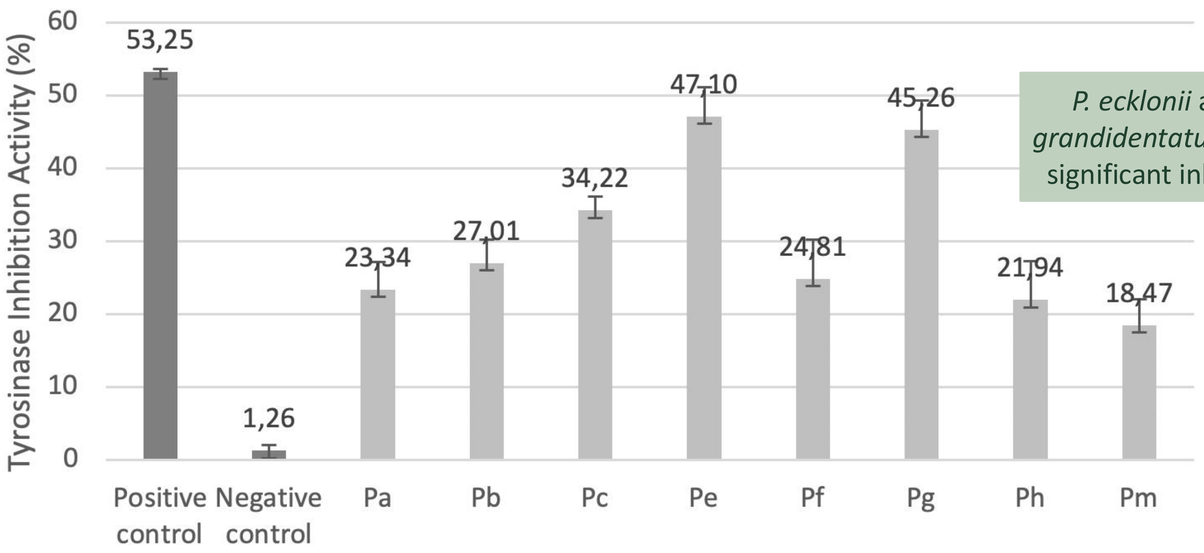
All extracts exhibit significant inhibition

Antioxidant activity



P. Ecklonii and P. grandidentatus exhibit high antioxidant activity

Tyrosinase inhibition activity



P. ecklonii and *P. grandidentatus* exhibit significant inhibition

Antimicrobial activity

	Gram +		Yeast	
	Sa (ATCC 25923)	***Se*** (ATCC 12228)	***Ca*** *(ATCC 10231)*	***Sc*** *(ATCC 2601)*
Pa	11	16	15	10
Pb	10	18	16	5
Pc	11	11	20	9
Pe	11	13	10	5
Pf	10	14	7	5
Pg	15	11	5	5
Ph	9	11	5	5
Pm	8	11	9	5
+ Control	26	27	28	17
- Control	5	5	5	5

P. ambigerus, P. barbatus, P. ecklonii, P. fruticosus and P. grandidentatus exhibit moderate antimicrobial activity

General toxicity assay

No relevant mortality was observed in the *Artemia salina* assay for any of the Plectranthus extracts.

CONCLUSIONS

Overall, the extracts of these traditionally used *Plectranthus* seem to be promising raw material for use in the development of dermocosmetic formulations, such as those with antiageing activity. More studies are ongoing to probe other relevant biological activities and to further ascertain the safety of the extracts.

REFERENCE

Filipe, M. et al., Plants 2026, 15, 1975. https://doi.org/10.3390/plants15131975.

REFERENCES/ACKNOWLEDGMENT

This work was supported by the Foundation for Science and Technology (FCT, Portugal) through the financial support to CBIOS under the project UID/04567/2025 (DOI: 10.54499/UID/04567/2025)