Flavonoids in the resinous exudate of Chilean Heliotropium species from Cochranea section

ARTICLE *in* BIOCHEMICAL SYSTEMATICS AND ECOLOGY · SEPTEMBER 1993

Impact Factor: 0.97 · DOI: 10.1016/0305-1978(93)90082-3

4 AUTHORS, INCLUDING:

Alejandro Urzúa
University of Santiago, Chile
155 PUBLICATIONS **1,228** CITATIONS
SEE PROFILE

Rene Torres
California State University, San Berna…
49 PUBLICATIONS **440** CITATIONS
SEE PROFILE

Biochemical Systematics and Ecology, Vol. 21, No. 6/7, p. 744, 1993.
Printed in Great Britain.

0305-1978/93 $6.00 + 0.00

Flavonoids in the Resinous Exudate of Chilean *Heliotropium* Species from *Cochranea* Section

ALEJANDRO URZUA,* LUIS VILLARROEL,* RENE TORRES* and SEBASTIAN TEILLIER†

*Laboratorio de Química Ecológica, Departamento de Química, Facultad de Ciencia, Universidad de Santiago de Chile, Santiago-2, Chile;
†Universidad Mayor, Santiago, Chile

Key Word Index—*Heliotropium filifolium*; *H. chenopodiaceum* var. *ericoideum*; Boraginaceae; external flavonoids.

Subject and Source

The section *Cochranea* of *Heliotropium* is known only from the coastal hills of northern and central Chile and Peru. This section is of particular interest because of the extreme localization of its species (Johnston, 1928). *Heliotropium filifolium* (Miers) Reiche and *H. chenopodiaceum* var. *ericoideum* (Miers) Reiche were collected during the flowering season, October 1990, in the North of Vallenar (III Region, Chile, 29°57'S, 71°W and 28°45'S, 70°49'W respectively). Voucher specimens were deposited in the Herbarium of the Faculty of Biological Sciences of Catholic University of Chile, Santiago, Chile (ST 2214 SSUC and ST 2229 SSUC).

Previous Work

In the resinous exudate of the related *H. stenophyllum* (sect. *Cochranea*) flavonoids and 2-geranyl-4-hydroxyphenyl acetate were isolated (Villarroel *et al.*, 1991).

Present Study‡

The resinous exudates of *H. filifolium* and *H. chenopodiaceum* var. *ericoideum* were obtained by dipping the fresh plant material in cold CH_2Cl_2 for 15 s. From the CH_2Cl_2 extract of *H. chenopodiaceum* var. *ericoideum*, five flavonoids were isolated and identified by spectroscopic methods (Vis–UV, NMR and EIMS) and TLC comparison with authentic samples and bibliographic data. The compounds isolated were: 7,3'-dimethyleriodictyol, ayanin, sakuranetin, kumatakenin and rhamnocitrin. From the CH_2Cl_2 extract of *H. filifolium*, in addition to a mixture of unknown aromatic geranyl derivatives, the flavonoids galangin and 3-methylgalangin were identified.

Chemotaxonomic Significance

The occurrence of flavonoids and aromatic geranyl derivatives in the resinous exudate of *H. stenophyllum* (Villarroel *et al.*, 1991) and *H. filifolium* suggests a close chemical relationship between this species. Only flavonoids have been found in the resinous exudate of *H. chenopodiaceum* var. *ericoideum* and this chemical difference is in agreement with the fact that the *H. chenopodiaceum* group is morphologically very different from *H. filifolium* and *H. stenophyllum* (Johnston, 1928).

Acknowledgement—This work was supported by FONDECYT (CHILE) 142–92.

References

Johnston, I. (1928) *Contribut. Gray Herbar. Harvard University*, **81**, 3. **Villarroel, L., Torres, R.** and **Urzúa, A.** (1991) *Bol. Soc. Chil. Quim.* **33**, 169.

‡Supplementary material provided.

(*Received* 19 *January* 1993)