



AMERICAN
BOTANICAL
COUNCIL

Post Office Box 144345
Austin, Texas 78714-4345
Phone 512/926-4900
Fax 512/926-2345
Email: abc@herbalgram.org
www.herbalgram.org

Mark Blumenthal
Editor

Wayne Silverman, PhD
Underwriting Coordinator

Betsy Levy
Densie Webb, PhD
Leela Devi, MSN, RN
Risa Schulman, PhD
Susie Epstein
Summary Writers

Karen Newton
Database Manager

Kara Dinda, MS
Susan McFarland
Co-coordinators

Dawnelle Malone
Research Assistant

The American Botanical Council provides this summary and the enclosed article as an educational service. By providing this article, ABC does not warrant that the data is accurate and correct, nor does distribution of the enclosed article constitute any endorsement of the information contained or of the views of the authors.

ABC does not authorize the copying or use of the original articles. Reproduction of the summaries is allowed on a limited basis for students, colleagues, employees and/or customers. Other uses and distribution require prior approval.

HERBCLIPTM

FILE: · Goldenseal (*Hydrastis canadensis*)
· Antimicrobial activity

DATE: June 15, 1999

HC 033091

RE: Goldenseal's Antimicrobial Activity Tested

Scassocchio, F, MF Cometa and M Palmery. Antimicrobial activity of *Hydrastis Canadensis* extract and its major isolated alkaloids. *Fitoterapia*, Vol. LXIX, Suppl. (5) pp. 785-791.

Hydrastis canadensis L. (Ranunculaceae), a small perennial plant of North America's damp forests, has been used traditionally by the Cherokee Indians for the treatment of wounds and ulcers. In modern phytotherapy, it is used in France, Germany, Spain, Australia and Great Britain to treat infections of the gastrointestinal, urogenital and respiratory tracts.

The scientific basis for these medicinal uses has, to date, been unclear because *H. canadensis* contains several alkaloids that may contribute to its effects. So far, ten of these alkaloids have been isolated. The purpose of this study was threefold: To test the disinfectant activity, to identify a standardized extract of *H. canadensis*, to identify the major alkaloids contributing to its disinfectant activity, and identify any important structural characteristics of the active alkaloids.

The antimicrobial activity of both an *H. canadensis* extract and isolated alkaloids was evaluated against six strains of microorganisms including *Staphylococcus aureus*, *Streptococcus sanguis*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Candida albicans*. The findings support the traditional use of *Hydrastis canadensis* for the treatment of some microbial infections, but in the authors' opinion, the most important antimicrobial activity comes from alkaloids other than the widely studied and written about berberine. They also concluded that structurally, the quaternary nitrogen group is not necessary for the alkaloid to have antimicrobial activity, while the opening of the C ring of benzylisoquinoline alkaloids (such as in canadine) results in increased antimicrobial activity. —Densie Webb, PhD

Enclosure: Copyright© 1998, *Fitoterapia*, reprinted with permission.

Bin #158