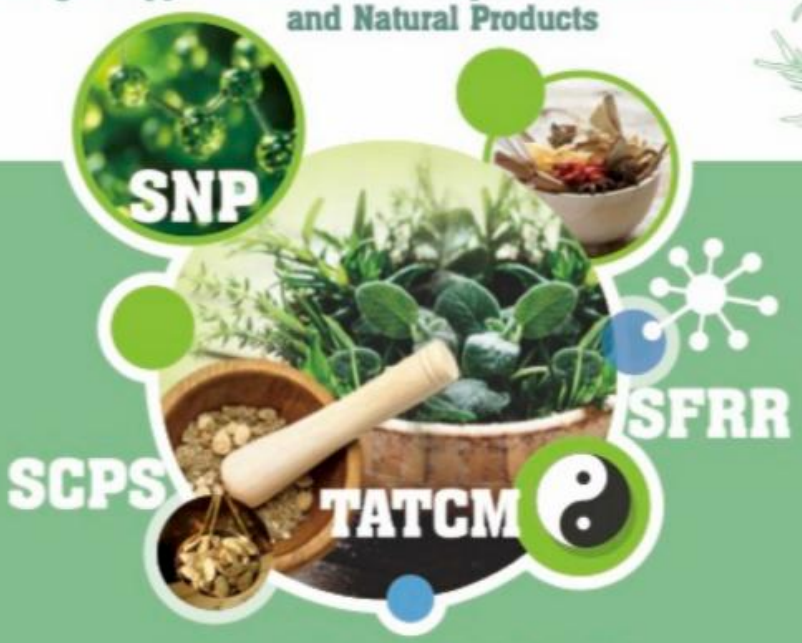
2025 繼往開來

ADVANCING TRADITION and INNOVATION

中醫藥與天然藥物的挑戰×機遇與未來

Challenges, Opportunities, and Prospects in Chinese Medicine and Natural Products



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大會手冊

CONFERENCE BOOK

Organizers

College of Chinese Medicine, China Medical University
Chinese Medicine Research Center, China Medical University
Center for Drug Research and Development, Chang Gung University of Science and Technology
The Natural Medicine Society of Taiwan
Society for Free Radical Research-Taiwan
Taiwan Association for Traditional and Complementary Medicine
The Society of Chinese Pharmaceutical Sciences of Taiwan
National Science and Technology Council

Co-organizers

Ministry of Health and Welfare
National Research Institute of Chinese Medicine
National Health Research Institutes

Co-badging

Society for Medicinal Plant and Natural Product Research (GA)
International Society for Ethnopharmacology (ISE)

CM-38

From herbal teas to antiviral agents: Exploring the pharmaceutical prospects of *Epilobium* species

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Abstract

Epilobium species (Onagraceae) have been traditionally used in European traditional herbal medicine for their anti-inflammatory and urological properties. The plants represent a promising source for pharmaceutical development. However, their phytochemical variability, quality control, and sustainable supply remain poorly understood. In addition, the plant has not been sufficiently tested as an antiviral agent, although daily consumption as a tea could be beneficial in the treatment of infectious diseases. Therefore, our comprehensive study included several steps, namely (1) assessing the optimal phenological stage of harvesting *E. hirsutum* and *E. angustifolium* under different growing conditions, (2) metabolomic profiling of more than ten *Epilobium* species from European countries, (3) assessing the quality of commercial willowherb teas available throughout Europe market, (4) investigating the antiviral potential of *Epilobium* species-based extracts. The study found that environmental factors (shade and humidity) significantly increased the levels of key metabolites (chlorogenic acid, isoquercitrin, hyperoside, oenothein B). QTOF-LC/MS metabolite profiling revealed high inter- and intra-species diversity, as well as new chemotypes and potential new marker compounds. Variability was also found among commercial tea samples, which may explain the different therapeutic uses of willowherb teas. Finally, *E. hirsutum* extract was shown to block the COVID-19 virus by preventing its attachment to cells. Water extracts were more effective than ethanolic extracts, with oenothein B being the most effective. Willowherb extracts significantly reduced inflammation in immune cells and acted as potent antioxidants. These results highlight the importance of integrating phenological, geographical, and metabolomic aspects to ensure the authenticity, safety, and efficacy of herbal medicines derived from *Epilobium* species.

Keywords: *Epilobium* species; Metabolomics; Quality control; Pharmacological assay; Coronavirus

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CM-35	Jung-Miao Li	Effects of the Traditional Chinese Medicine formula Zhu Pi Da Wan on offspring gut microbiome and intestinal transcriptome in a postpartum mouse model
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CM-38	Michal Korinek	From herbal teas to antiviral agents: Exploring the pharmaceutical prospects of *Epilobium* species
CM-39	Chuen-Hsu Fu	Investigation of the extract and triterpenoid content of *Antrodia cinnamomea* fruiting body single-herb dropping pill