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The great oriental herbal PentTsao and Ayurveda as a source of modern medicines: a medicinal chemistry approach

Enrique Raviña

University of Santiago de Compostela, Spain

The lecture to be delivered by author is basically based on his book “*The Evolution of Drug Discovery: From Traditional Medicines to Modern Drugs*” Wiley-VCH, Germany, 2011. The review “Perspective and overview of Chinese traditional medicine and contemporary Pharmacology” by Leong Way et al. [Progress in Drug Research, Vol.47, E. Jucker, Ed. Birkhäuser Verlag Switzerland, 1996] will be also used as a source of introductory material. The heritage of oriental traditional medicine recovered in books of Materia Medica, pharmacopoeias or compendia has provided leads to therapeutic agents for treatment of illnesses. One of these compendia, Ayurveda (science and knowledge of life) can be traced back to 6,000 BC. Comprising a comprehensive treatise of thousands of herbs and herbal mixtures, Ayurveda has been used in the indigenous system of medicine in India for thousands of years. Similarly, both the earliest Materia Medica Shen nung Pents’ao Ching and the latest Pharmacopoeia Pents’ao Kang mu wrote by Li Shi Chen (1518-1593), are well known compendia on herbal drugs. Some of the valuable modern drugs come from herbs or herbal mixtures described in these old compendia and pharmacopoeias. An account of these drugs will be provided. As a source of new drugs, we would like to highlight, among others, the best validated Chinese drug to the West, the active principle of Mahuang (*Ephedra sinensis* L), isolated alkaloid ephedrine whose structural chemical variations opened the door to β -blocker agents. Similarly, from 1970s onward, anti-malarial artemisinin (qinghaosu) active principle of *Artemisia annua* L has been isolated by Chinese scientist. *Artemisia annua* L is described in Pents’ao great herbal as antipyretic against fevers. Structural chemical variations on artemisinin gave rise to the development of new semisynthetic antimalarial agents used alone or in combination with known older antimalarial drugs. Also, the Indian *Rauwolfia serpentina*, known in Ayurveda as serpaghanda, has been used for thousands of years to treat hypertension and insanity. One of the active principles the alkaloid reserpine opened the door the later research and development of neuroleptic and antihypertensive agents. At the end, a brief account of the herbal supplement from *Ginkgo biloba* will be provided.

enrique.ravina@usc.es