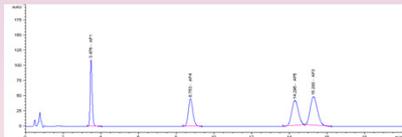


Research and Development of Selected Medicinal Plants



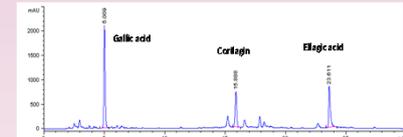
Fah Talai Jone (*Andrographis paniculata* (Burm.f.) Nees)

In Thailand, this plant was selected by the Ministry of Public Health to be included in 'The National List of Essential Herbal Drugs A.D. 1999', as an herbal drug for the treatment of common cold symptoms (e.g. sore throat, fever) and non-infectious diarrhea. It contains several diterpenoids including andrographolide, 14-deoxy-11, 12-didehydroandrographolide, neoandrographolide, and 14-deoxyandrographolide. These active diterpenoids exhibited different types and degrees of pharmacological activities. At Chulabhorn Research Institute, we developed the extraction and identification of these active compounds in this plant using High Performance Liquid Chromatography (HPLC). The variation of these compounds during plant development was also studied for selecting suitable stage containing high level of specific compounds. Moreover, the pharmacokinetic profiles of these active diterpenoids were examined in healthy Thai volunteers.



Longan (*Dimocarpus longan* Lour.)

Longan is one of major fruits in Thailand. Flower, seed, and fruit of longan have been used in the Traditional Chinese Medicine (TCM) serving as a common herb in relief of swelling which can be applied for inflammatory diseases. The phytochemical compounds in longan were extracted and identified as gallic acid, corilagin, and ellagic acid. The standardized longan extract was developed to be used in cosmetic and anti-inflammatory drug.

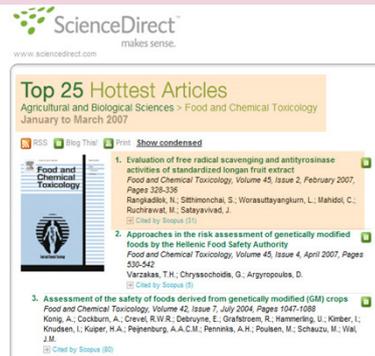


Development of techniques for analysis of the bioactive compounds including standardization of medicinal plants

This research developed the techniques for extraction and determination of the bioactive compounds from Thai medicinal plants. Standardized plant extract was also prepared and then used to examine for pharmacological activities such as anti-oxidant, anti-inflammation, anti-diabetes, anti-cancer etc. both in vitro and in vivo. Then these plant extracts will be further studied for any toxicities in animals. After product formulation (as herbal medicine or supplement), pharmacokinetic profiles of this product may be evaluated in healthy volunteers for dose optimization in order to obtain good therapeutic efficacy and reduce the possible side effects.

Application of research

Standardized plant extract will be developed in large scale production for the use in pharmaceutical or cosmetic industrial. The standardized extracts produced from this research are Fah Talai Jone and longan extracts. They contain high levels of bioactive compounds and they will produce high efficacy for the treatment of diseases. The preparation process was granted for Thai petty patent. Moreover, the paper on anti-oxidant of longan published in Food and Chemical Toxicology was ranked No.1 for Hottest articles of the journal for a period of time. The project also received a certificate from the Senate for the application of science and technology. These products with high quality can be exported to other countries and the income will help to improve quality of life for the farmer.



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