Polar constituents from tea seeds (Poster)

Siripen Jarikasem, Tanwarat Kajsongkarm, Pongsatorn Limsiriwong, Taweesak Suntorntanasat

Pharmaceutical and Natural Product Department, Thailand Institute of Scientific and Technological Research, Pathumthani 12120, Thailand

Introduction
Tea plants (*Camellia sinensis* L., Theaceae) are one of the important economic crops in the northern part of Thailand. At present, farmers can only benefit from tea leaves so tea seeds are regarded as agricultural waste products. Traditionally, tea seed cakes which contain saponins have been used as hair and nail cleansing remedies for curing and/ or prevention of fungal infections due to their antimicrobial and natural detergent like effects (Laohapaiboon, 1981) . In order to make use of tea seed saponins for increasing income to the farmers, we haved carried out the research project entitled "Research and development of hair and skin cleansing cosmeceuticals from tea seeds". This work described the phytochemical studies of tea seed polar fraction in order to find the suitable chemical marker for a quantitative analysis of the active extract as well as its cosmeceutical products for the quality assurance.
Objective
To extract, purify and characterize the polar components from tea seeds collected from the northern part of Thailand.
Methods
Tea seed kernel powders were defatted with n-hexane in Soxhlet apparatus and then extracted with 95 % ethanol. Repeated chromatographic separation of the ethanolic extract over Diaion HP-20, Sephadex LH-20 and RP-18 semiprep. HPLC were performed to obtain the pure components. Spectroscopic techniques (^{1}H- and ^{13}C-NMR, LC-MS) were employed for the structural elucidation of the components.
Results
Five components belonging to the 3 different groups of plant secondary metabolites; 1 alkaloid (caffeine), 3 flavonoid disaccharides (5,7,4'-trihydroxyflavanone-7-disaccharides) and saponin (mixture of theasaponins) were isolated from polar fraction of tea seeds.
Conclusion
Tea seeds (*Camellia sinensis*, Theaceae) collected from the northern part of Thailand were investigated for their polar constituents using repeated column chromatographic separation techniques over Diaion HP-20, Sephadex LH-20 and RP-18 semiprep HPLC, respectively. Five components were isolated and characterized by spectroscopic means (^{1}H- and ^{13}C-NMR, LC-MS). These include caffeine, three naringenin disaccharides and theasaponin mixture, respectively.

Selected references
1. Laohapaiboon, P. and Tosukowong, P. 1981. Antifungal activity of tea seed cake and tea seed extract. Chulalongkorn Wejchasarn. 25(4):953-59.

Keywords: *Camellia sinensis*, saponin, caffeine, naringenin disaccharides

Presenting Author : Pongsatorn Limsiriwong, ponglim2511@yahoo.com