

3rd World Congress on

TRADITIONAL AND COMPLEMENTARY MEDICINE

September 10-11, 2018 Auckland, New Zealand

Fijian medicinal plants used in the treatment of Alzheimer's disease and related illnessRomila Devi Gopalan¹, Ranish Nitesh Chand^{1,2} and Ketan Christi¹¹The University of the South Pacific, Fiji²Ministry of Education Heritage and Arts, Fiji

Background: Traditional and alternative medicine is the indigenous healthcare method that is still widely in the developing countries. Traditional medicine has been part of the Fijian culture due to its safety and effectiveness to illnesses. However, this knowledge is restricted to only the traditional village healers. In a survey carried out recently in Fiji, thirteen traditional medicinal plants were selected, those that were used by Itaukei village healers to cure headache, depression and related sickness. Since the traditional method for medicine preparation is extraction in water, the plant samples used in the study were extracted with water and ethanol. The crude extracts were then analysed for acetylcholinesterase inhibition (AChEI) using Ellman's assay.

Method: Thirteen plant species belonging to Melastomataceae, Asteraceae, Apiaceae, Rutaceae, Goodeniaceae, Loganiaceae, Araliaceae, Solanaceae, Polygonaceae, Zingiberaceae and Anacardiaceae families were tested at 0.2 mg/ml, 0.4 mg/ml, 0.6 mg/ml, 0.8 mg/ml, 1.0 mg/ml, 1.5 mg/ml and 2.0 mg/ml concentrations.

Result & Discussion: The most active plants showed AChEI activity between IC₅₀=4.57 mg/ml to IC₅₀=9.24 mg/ml indicating the effectiveness of the compounds present in the extracts against the acetylcholinesterase, the enzyme that plays a key role in normal cognition and memory.

Conclusion: The plant extracts used in this study were crude extracts, thus the concentration of the active phytochemicals present may be of a very low concentration. These thirteen plants could prove leads to safer and better candidates for the future selection of acetylcholinesterase inhibitors and potentially in treatment of Alzheimer's disease and related illness.

Biography

Romila Gopalan has completed his PhD in 2012 from Monash University. She is currently a Senior Lecturer at The University of the South Pacific. Her research is mainly in the areas of functional foods, medicinal chemistry and natural products chemistry. She has published in many reputed journals and also involved in Research Skill Development and Science Education at The University of the South Pacific.

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