



Survey of Ethanomedicinal Plants from Eastern Ghats, Tamil Nadu, India with special reference to neurodisorder using in silico and in vitro approaches

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Abstract:

The most second common neurodegenerative disorder is Parkinson disease, which completely affects standard of life, causes dependency and premature mortality of the diseased person. The present study aims to document the data about the traditional uses of plants in health care trainers among local peoples of areas which may lead to natural drug invention development. The collected specimens were statistically analysed. Effective phytochemicals and their mode of interaction were analysed by various bioinformatics tools. Further, cell line activity also analysed. During this investigation, totally 235 field trips and 194 days spent for gathering knowledge from 137 informants. All the documented plants were statistically analysed by FC, RFC, UV, RI, CI, FI and Pearson correlation coefficient. Homology modelling, binding site validation, molecular docking and MD simulations were studied. Free radical scavenging and antioxidant activity was analysed against PC12 cell line. Totally, 85 medicinal plant species belonging to 73 families were documented for the treatment of 17 different ailments. Among them, 20 plants were used for neuro disorder and their phytochemicals were docked with Parkinson disease causing receptor (DJ1). Punigluconin (*Phyllanthus emblica*) is potential docking score and it was proved good binding affinities. *P. emblica* fruit extract has excellent antioxidant and radical scavenging activity. This is the first time the neuroprotective effects of *P. emblica*

have been reported in human neural cell line. Finally, conclusion of this study Punigluconin is most suitable drug candidate for Parkinson disorder.

Biography:

Dr S. Vijayakumar has received his doctorate degree from Barathidhasan University and has more than 18 years of teaching experience at U.G. and P.G. levels. He has 20 years of research experience. He is working as Assistant Professor in the Department of Botany and Microbiology, A.V.V.M. Sri Pushpam College (Autonomous), Poondi-613 503, Thanjavur district, Tamil Nadu. He has got vast experience in, Medicinal plants, Computer Aided Drug Design (CADD). At present he is completed 13 Ph.D and guiding 7 Ph.D. programmes in this line. So, far he has guided 24 M.Phil, candidate for their degree and published 94 research papers in SCI journals. He has acted as reviewer in many SCI journals publishers. He has got many awards during his research activities.