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Neuroprotective and antioxidant potential of indian traditional herb *Cynodon dactylon*

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Abstract

Background

Neurodenerative diseases are often characterized by progressive memory loss and cognitive impairment.In traditional and Chinese medicine; numerous plants have been used to treat these cognitive disorders including neurodenerative diseases such as Alzheimers disease & Parkinson's disease. Henceforth, our research and understanding has found the neuroprotective effect of the extract of *Cynodon dactylon* in rat model.

Objective

The aim of this study is to investigate the phytoconstituents of *Cynodon dactylon* by gas chromatography-mass spectroscopy (GC-MS) technique and to investigate the neuroprotective & antioxidant activities of the ethanol extract of *Cynodon dactylon against* diazepham induced neurotoxicity in rat brain.

Method

The phytoconstituents present in the extract of *Cynodon dactylon were studied by GC-MS* and the animals were treated with the ethanolic extract of CD at two different doses (250 mg/kg and 500 mg/kg) for 15 successive days in different groups of rats. Further, biochemical and histopathological observations confirmed the beneficial roles of ethanol extract of *Cynodon dactylon against* diazepham induced neurotoxicity in rat brain.

Result

The Diazepham significantly increases the level of achetylcholinestrase, cholesterol, malondialdehyde (MDA) & superoxide dismutase (SOD) along with the reduced level of glutathione-s-transferase (GST), glutathione (GSH) & glutathione peroxidase (GPx). These values are retrieved significantly by the administration of ethanol extract of CD (500 mg/kg B/W) when compared with the standard drug simvastatin (5mg/kg B/W).

Conclusion

Thus the ethanol extract of CD might serve as a reliable adjuvant for neurotoxicity, and may be promising for development of phytomedicines for antioxidant and neurodegenerative disease.

Biography

S Palani Subramani was born in a remote village, Seelappandal, which is located in the Tiruvannamalai district of Tamil Nadu State, India. He obtained his Ph.D in the stream Biochemistry and his doctorate was awarded by the Thiruvallur University, Velllore, Tamil Nadu, India by the year 2010.He has a teaching experience of about 15 years by working as an Professor at the Department of Biotechnology,Anna Bioresearch foundation ,Arunai Engineering College before which he had been a Assistant Professor at Department of Pharmacy, Kamalakshi Pandurangan College of Pharmacy, Tiruvannamalai. He has his research experience other than this by guiding several students to perform their projects at undergraduate and post graduate levels and he has even been appointed as a Ph.D guide at the Anna University,Chennai and Manonmanium Sundaranar University,Tirunelveli .Proving his research quality mainly in the area of Natural Products, he has about 20 publications in several National and International Journals. He even has filed a patent for his work of Monochoria vaginalis. He has been an invited talker on Chemistry and Biology of Antioxidants at the Sapienza Univeristy of Rome, Italy and on Natural Products and its therapeutic efficiency at Zurich University, Switzerland whose travel grants had been supported by ICMR and DST. He has even organized a two day conference on "Natural Products and Drug Discovery" which had been supported by ICMR. He has been awarded as Outstanding Young Investigator Award-2010 by Raise.Rural organization and also for being the Best Faculty at his workplace. He carries out work mainly on knowing and analyzing the potentials of various Natural Products for the treatment of various diseases and disorders.