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Harnessing natural resources as a source for obtaining new drugs and expanding therapeutic strategies for the treatment of pathologies

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Sugarcane cultivation has advanced worldwide. In Brazil, data on the 2013-2014 crop yields show that the area devoted to the cultivation of the plants was approximately 8 million hectares with a production of about 600 million tons intended mainly for obtaining sugar and ethanol. Due to advancements in biotechnology, the use of ethanol as a biofuel has already been well established. Several efforts have been made in order to use the agricultural waste from sugar cane, i.e., bagasse and straw. Currently, the sugarcane bagasse supply amounts to 20 million tons/month-this is the raw material used in the factories of this sector to generate heat, steam and energy in the production process. Straw has great potential for generating heat, electricity and producing cellulosic ethanol. In order to take full advantage of this plant, we are looking for new potentials; it may have as a source for new drugs or as raw material for the production of biomolecules with therapeutic purposes. Pharmacological tests revealed that aqueous extracts of the green leaves had an effect on the central nervous system in animals more specifically involving neural circuits linked to motor and cognitive processes. Considering the existence of various neurological and psychiatric disorders such as Parkinson's disease, Huntington's disease and schizophrenia, the search for new psychoactive agents is essential. Therefore, the pharmacological validation of plant species such as sugarcane which has been used for decades by the population offers new perspectives on the development of therapeutic agents for the treatment of serious diseases.

Biography

Maria Thereza Gamberini received her Master's and Doctoral degrees in Pharmacology from the Federal University of São Paulo, Brazil. She is currently Assistant Professor at Santa Casa de São Paulo Medical School, Brazil. She has experience in the field of pharmacology of natural products with an emphasis on the pharmacological validation of plant extracts and the isolation and characterization of biomolecules of plant origin.

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