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MEETING ABSTRACT

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How, why, and when to train the pharmacological targets for prevention of “second brain” injuries?

Shyam Sunder CHATTERJEE*

*Retired pharmacologist; Pharmacology Research Laboratories,
Dr. Willmar Schwabe GmbH & Co., Karlsruhe, Germany*

Injuries and/or malfunctioning of the enteric nervous system, often referred to as “the second brain”, leads to metabolic disorders and malnutrition- (both under- and over-nutrition)-associated physical and mental health problems. Although numerous pharmacological targets regulating the functions of the second brain and their functional modulators are now known, prevention and cure of malnutrition-triggered, or -associated, diseases and their syndromes still continue to be a major challenge for all systems of medicine, modern or alternative or complementary or not. Observations made during efforts to precondition a few well-known pharmacological targets involved in physiological functions of the second brain led us to identify several multi-targeted phytochemicals, fairly low daily oral doses of which afford protection against diverse spectrums of psychopathologies associated with, or caused by, malnutrition-triggered diseases and their symptoms. Food phytochemicals and most other pharmacological tools used during these efforts are the ones identified during efforts to decipher several paradoxical, or not yet easily explainable, observations made in Riga and elsewhere with several drugs leads from traditionally known medicinal plants identified during the second half of the past millennium in our research groups as therapeutic options for treatments of cognitive disorders [1]. In this presentation, potential uses of some cost- and time-saving and more predictive rodent bioassays now often used in our research groups for better understanding of quantitative systems pharmacology of bioactive substance necessary for judging their therapeutic potentials, or for drug discovery and development purposes, will be pointed out.

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Keywords: quantitative systems pharmacology – phytochemicals – preconditioning – allostatic load – bioassays *in vivo*

Reference

1. Chatterjee SS: **From covalent bonds to eco-physiological pharmacology of secondary plant metabolites.** *Biochem Pharmacol*, 2015; 98(2):269–277. doi:10.1016/j.bcp.2015.07.037

*Current corresponding address: Shyam Sunder Chatterjee, Stettiner Straße 1,
D-76139 Karlsruhe, Germany. E-mail: shyam.chatterjee@web.de