EDITORIAL

Shedding New Light on Pharmacological Sciences

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We are glad to release the third issue (Volume 2 Issue 2) of INNOSC Theranostics and Pharmacological Sciences. In this issue, three research original articles and one full-length review article which were authored by researchers from different countries have been published. This issue was published with a mixture of articles that discussed different aspects of pharmacological sciences and research. In particular, improvement of drug delivery system, studying the beneficial effects of natural products, investigating the drug potentiation, and reviewing a wide array of research models for studying inflammation are the key highlights of this issue which fit into the journal’s focus and scope.

In the first research article entitled “Formulation Development and In vitro Release Studies of Tenofovir-containing Microsponges,” Eslavath et al. developed and characterized microsponges which contain tenofovir (TNF) [1]. The authors used quasi-emulsion diffusion technique to generate TNF-containing microsponges. Drug and polymer were experimented with five formulations and characterized with size, crystallinity, and interactions. Drug entrapment efficiency was found to be up to 67%, and the particle size was approximately 8.98 µm. Cumulative drug diffusion with the second formulation (F2) was found to be 84.15% and X-ray diffraction study indicated the reduction in the crystallinity of the drug. High-resolution microscopy analysis has indicated that the formulation is a spherical shape. With these favorable characteristics, the study concluded that the second formulation is the best, and thus, it can be used for conventional therapy.

In the second article entitled “Ascorbic Acid-Rich Moringa oleifera Lam. (MO) Extract Inhibits Hepatorenal Toxicity and Enhances the Endogenous Antioxidant Levels in Streptozotocin-Induced Type II Diabetes,” Kumar et al. found out that a potential therapeutic agent can be derived from the plant source which is the M. oleifera [2]. The experiment was designed to test the hepatic and renal beneficial effect of the MO extract in streptozotocin-induced diabetes. Antidiabetic potential of the MO extract was desired with the improvements in blood glucose levels, plasma insulin, hexokinase, and glucose-6-phosphate. Antihyperlipidemic effects of the MO extract were also revealed by the reductions of the low-density lipoprotein (LDL) cholesterol, total cholesterol (TC), triglyceride (TG), very LDL (VLDL) cholesterol, and high-density lipoprotein (HDL) level. The antioxidant properties of the extract were also screened through the estimation of catalase (CAT), superoxide dismutase (SOD), malondialdehyde (MDA), and glutathione peroxidase (GPx) levels in diabetic rats. As a result, a significant increment with the body weight, hexokinase, plasma insulin, HDL, SOD, CAT, and GPx levels and the decrement in the fasting blood glucose, TC, TGs, LDL, VLDL, MDA, fructose-1,6-bisphosphate, glucose-6-phosphate, and glyced hemoglobin were noticed.

In “Long-term Administration of Rosuvastatin and Rivastigmine: An In vitro Evaluation on Cognitive Functions and Brain Acetylcholinesterase Activity,” Badruddeen et al. pointed out that lovastatin alone did not improve the cognitive functions and brain acetylcholinesterase activity in Swiss albino mice, but these parameters were improved when rivastigmine was used in combination [3,4]. This new finding indicated that lovastatin could potentiate the drug effect of rivastigmine for enhancing cognitive function.

In the review article entitled “In vitro and In vivo Models for Anti-inflammation: An Evaluative Review,” Eze et al. reviewed and summarized the research models for studying inflammation [4]. Their review constitutes an updated review of the in vitro and in vivo study models for assessing anti-inflammatory activity in plant extracts and synthetic drugs. Further, they also extensively described the materials, instrumentation, and methods involved, as well as the mechanism of anti-inflammatory activity. A comparative assessment to reveal the sensitivity, reliability, duration of test, and ethical and cost considerations of the research models is also narrated.

We hereby express our deepest gratitude to the researchers who submitted their articles to INNOSC Theranostics and Pharmacological Sciences.
REFERENCES


