SUMMARY AND CONCLUSION

Pharmacognostical standardization of the In-house formulation of Neerzhivu choornam laid down the standards of raw material, as well as the prepared formulation. The values obtained from the preliminary standardization are accurate and reproducible. This will make the scientist and industrialist who intend to do research on this formulation easy and convenient. Standardization of herbal formulation using modern tool would be achieved by this protocol.

Phytochemical screening and phytoanalytical studies like TLC and HPTLC studies using reference standard have been carried out to standardize the individual herbal drug which is involved in the formulation and they are also identified in the wholesome formulation. Sophisticated, modern instruments were used as an advanced tool in phytopharmaceutical evaluation of the selected polyherbal formulations so as to prescribe the quality standards for better therapeutic efficacy. TLC profile of aqueous, alcohol extracts provides a suitable method for monitoring the identity and purity and also standardization of the drug.

The toxicological evaluation of herbal drug ingredients like determination of pesticide residues, heavy metal contamination and microbial contamination and their formulation Neerazhivu chooranam for acute toxicity studies using recent advanced analytical tools have been carried out in keen interest of uplifting the herbal drug to the global markets. In the current research the anti-diabetic Siddha poly herbal formulation “Neerazhivu choornam” was subjected to various toxicological evaluations to ascertain its safety for safe use of the diabetic patients. The herbal formulation under acute toxicity studies by OECD guideline shows it is non toxic upto 2000mg/kg BW, so it can be recommended for human conception after a safe clinical trial. The results obtained from the above research might give a definite assurance for better use of “Neerazhivu choornam” for diabetic management and also to create a good demand in the market.

The present study demonstrates that this polyherbal formulation exhibits promising antidiabetic activity and help to maintain good glycemic and metabolic control. The herbal formulation, Neerizhivu choornam, elicit hypo-glycaemic/antidiabetic effects in both normal and experimentally induced hyperglycemic (Streptozotocin induced) rats. The herbal formulation under acute toxicity studies by OECD guideline shows it is non toxic upto 2000mg/kg BW, so it can be recommended for human conception after a safe clinical trial. It is
possible that the herbal formulation may act through both, pancreatic and extra-pancreatic mechanism(s). This Neerizhivu choornam also elicited a significant antidiabetic effect in Streptozotocin induced diabetic rats as reflected by its ability to inhibit lipid peroxidation and to elevate the enzymatic antioxidants in pancreatic tissue. The histopathological studies during the long term treatment have shown to ameliorate the Streptozotocin induced histological damage of islets of langerhans. The inhibitory effects on biochemical and histological parameters induced by herbal formulation at a dose of 500mg/kg were almost comparable to that of standard drug, Glibenclamide (5mg/kg).

The extract of Neerazhivu choornam exhibited significant anti-hyperglycemic activity in Streptozotocin induced diabetic rats. This extract showed improvement in parameters like body weight, food consumption, organ weight and biochemical parameters and might be of great valuable in diabetic treatment.

Based on phytoformulation testing results of the tablets of Neerazhivu choornam and stability data of different batches, it is concluded that results from batch no FD/189/12 is excellent compared to other batches. So, the manufacturing formula used on batch No. FD/201/12 can be finalized for the tablets.

Based on phytoformulation testing results of the capsules and stability data from batch no FD/201/12 is excellent compared to other batches. So, the manufacturing formula used on batch No. FD/201/12 can be finalized for the capsule.

The advanced phytopharmaceutical studies on “Neerzhivuchoornam” has proved to be a potential anti-diabetic poly herbal formulation at par with modern formulations.