CONCLUSION

The current study presents a substantial body of empirical data supporting *LivSwasthya* antioxidant and hepatoprotective activity. The polyherbal formulation containing aqueous herbal extract of *Alstonia scholaris* (bark), *Oroxylum indicum* (bark), *Drymaria cordata* (whole plant), *Centella asiatica* (whole plant), *Hydrocotyle sibthorpioides* (whole plant), *Senna occidentalis* (leaf), *Senna hirsuta* (leaf), *Stephania japonica* (tuber) and *Solanum indicum* (root) were obtained based on the recommendations of local traditional healer. It was used for hepatoprotective activity.

Organoleptic examination, the most straightforward or humane form of analysis, indicated that there was no contamination in the formulation. The formulations showed evidence of Trichome, Acicular crystals, Stone cell, and Fiber under a microscope.

The qualitative test has shown that *LivSwasthya* has a diverse range of phytochemicals, including as phenols, flavonoids, alkaloids, terpenoids, quinones, and phlobatannins. This suggests that these compounds may possess medicinal properties. An investigation of the physical features of *LivSwasthya* powder revealed that it had favourable flow properties and is less voluminous, making it very suitable for packaging purposes.

LivSwasthya aqueous extract demonstrated a high amount of phenolics and flavonoids, as well as a high activity in the total reducing power assay, in a quantitative test. The DPPH, Hydroxyl radical scavenging, and Ferric reducing power experiment demonstrated a positive correlation between concentration and radical scavenging activity. *LivSwasthya* exhibited a much greater Hydroxyl Scavenging activity compared to conventional ascorbic acid.

In an *in-vivo* investigation, *LivSwasthya* significantly reduced the high levels of liver serum enzymes (ALT, AST, and ALP) caused by CCl_4 compared to the control group. After CCl_4 injection, the concentrations of TG, LDL, and VLDL increased dramatically, whereas the concentration of HDL dropped. However, there was a decrease in TG, LDL, and VLDL and an increase in HDL levels following treatment with *LivSwasthya.* When compared to the lower dose and the standard group, the larger dose of *LivSwasthya* has the potential to considerably lower the SGPT level.

The CCl_4 treatment group had substantially higher levels of blood bilirubin, GGT, and

creatinine compared to the normal group. After undergoing *LivSwasthya* therapy, there was a decrease in the concentration of creatinine, GGT, and bilirubin levels.

Furthermore, the antioxidant enzymes GPx, SOD, and CAT increased significantly in the *LivSwasthya* and silymarin treated groups, but the CCl_4 treatment decreased them. The GPx activity exhibited a 42% increase after administration of a larger dosage of *LivSwasthya*, reaching a level equivalent to that of the silymarin group. The actions of *LivSwasthya* and silymarin also led to a considerable reduction in MDA concentration.

The liver histopathological analysis demonstrated that the medication *LivSwasthya* effectively shielded experimental rats from CCl_4-induced liver damage.

The findings of this study indicate that the herbal formulation *LivSwasthya*, used by the traditional healer of BTR, Assam, has high amounts of antioxidants, attractive physical characteristics, and potential as an alternative treatment for liver illness.