

*Conclusion*

---

## 8. Conclusion

- High fructose fed rats develops insulin resistant condition as well as androgen dependent hypertension. Aqueous extract of EL reduces the insulin resistance and also hypertension. Thus protects the high fructose fed rats from insulin resistance.
- Islets exposed to H<sub>2</sub>O<sub>2</sub> leads to apoptosis. EL pre-treatment before H<sub>2</sub>O<sub>2</sub> exposure could protect islets from damage by improving poor antioxidant defense system of islets.
- Mitochondrial and post-mitochondrial oxidative stress play important role in the development of drug-induced nephrotoxicity. Methanolic extract of EL as an antioxidant therapy could protect drug-induced nephrotoxicity in rats. Indicating that EL is having very good antioxidant potential and can prevent many disease conditions in which oxidative stress play major role in its development.
- Our study indicates/supports the fact that uncontrolled hyperglycemia, dislipidemia, non-enzymatic protein glycosylation, activation of polyol pathway enzyme aldose reductase, oxidative stress, platelet hypersensitivity and blood coagulation abnormalities leads to the development of microvascular complications of diabetes. EL treatment increases insulin secretion, insulin sensitivity, corrects dislipidemia; platelet hypersensitivity; blood coagulation abnormalities and also improves non-enzymatic and enzymatic antioxidant status in the diabetic rats. It is also having antinociceptive and anti-hypertensive activity. Thus prevents development of diabetic microvascular and macrovascular complications in rats.
- Thus, our study on efficacy of EL extracts in insulin resistance and diabetic complications in rat model suggest that EL can be good therapeutic drug for the prevention of insulin resistance, progressive loss of  $\beta$ -cells and diabetic complications in newly diagnosed patients. It may delay occurrence of complications in diabetic patients who do not have signs of diabetic complications. Its efficacy is comparable to standard anti-diabetic drugs available in the market and can be a cheaper and safer alternative treatment for diabetes and its complications.