Chapter 7

Summary & conclusions
Summary and Conclusions

7.1 Limitations of the study:

1. Duration of the study was fixed to 30 days in the present study, which was a limitation of the study. By increasing or decreasing the duration of the study, the effectiveness of DADS could have been determined.

2. In the present study the toxic effects of DADS at a very high doses was not determined.
7.2 Summary and Conclusion:

1. The purpose of the study was to establish the optimum effective dosage of DADS and determine the hypolipidemic effect of DADS in alloxan induced diabetic rats.

2. A total of 42 healthy wistar strain male albino rats weighing between 200-250 grams were randomly selected. Of these, 18 rats were divided into three groups to determine the optimum effective dosage and remaining 24 rats were divided into four groups to determine the effect of DADS. Each group consisted of six rats.

3. The hypolipidemic effect was observed with and without the treatment of DADS for 30 days in normal and alloxan induced diabetic rats.

4. The following parameters were tested with and without the treatment of DADS for 30 days. Total lipids, total cholesterol, triacylglycerols, phospholipids, free fatty acids, esterified fatty acids, total fatty acids, LDL, HDL, VLDL-cholesterol, HMG CoA reductase activity, fecal bile acids, lipoprotein lipase activity, blood glucose, thiobarbituric acid reactive substances, total thiols, AST & ALT.

5. DADS significantly lowered the raised plasma and liver tissue lipids in alloxan induced diabetic rats. This hypolipidemic effect of DADS in alloxan diabetic rats may be due to lowered NADPH levels as the reduction of DADS to its constituent thiols requires NADPH.

6. The hypocholesterolemic effect of DADS in alloxan diabetic rats observed is due to partial inhibition of HMG CoA reductase as evidenced by increased levels of HMG CoA/mevalonate ratio.
7. The observed hypocholesterolemic action of DADS is partly due to increased catabolism of cholesterol to bile acids as evidenced by the increased excretion of fecal bile acids in alloxan diabetic rats.

8. DADS at the dose employed in present study, significantly lowers plasma glucose levels, probably by increasing glucose utilization.

9. DADS did not show a significant reduction in TBARS and improvement in total thiol groups in diabetic rats when compared to group II.

10. DADS show a decreased activity of transaminases in alloxan diabetic rat liver by suppressing the gluconeogenesis in the liver.

11. DADS may reduce the diabetes mellitus induced liver changes as evidenced by histological studies.

12. There was no significant difference between the normal rats and DADS treated normal rats in all the parameters assessed, proving the safety of DADS dose employed.

13. From these findings, we conclude that DADS treatment is an effective means to control diabetes induced dyslipidemia in wistar strain male albino rats. Even the blood glucose levels, transaminases and liver morphology were restored by the treatment with DADS.
Future directions of the study:

1. Future studies are required to see the effectiveness of DADS by changing the duration of treatment.
2. Future studies are carried out to check the toxic effects of DADS at higher doses.
3. Future studies are carried out to find the mechanism by which DADS is beneficial.
4. Further research is carried out to find out more active compounds of garlic having the beneficial effects.