CONCLUSIONS
7. CONCLUSIONS

- The chromium porcine insulin, vanadium porcine insulin and chromium human insulin formulations were developed using trace metals of chromium and vanadium with proven antidiabetic activity and also developed porcine insulin and human insulin. The formulations were developed in the form of suspension containing 40 IU/ml.

- The optimum pH required to prepare these formulations was found to be 4.5 to 4.7 and acetate buffer was found to be pH 12.2.

- The concentration of chromium and vanadium in the formulations were found to be 12.42 pg/ml and 15.6 µg/ml respectively. The preservative concentration used in the formulations was 0.344 mg/ml.

- Results of HPLC chromatographic data and analytical data for metal ion estimation by atomic absorption spectroscopy revealed that all the formulations of insulin were stable at 2-8°C for the period of 12 months.

- Among porcine insulin, mixtard (Highly purified biphasic monocomponent human insulin) and human insulin formulations mixtard appears to produce not only more effective control of glucose levels but also prevents STZ induced dyslipidemia.

- Addition of chromium or vanadium in the insulin preparation appears to produce beneficial effects not only in terms of glycemic control but also with respect to prevention of dyslipidemia and decrease in mortality.
Conclusions

Since, chromium porcine insulin was found to increase HDL cholesterol, reduction in LDH levels and prevented STZ-induced alterations in kidney or liver, it may be developed as superior of formulations for not only adequate glycemic control but also for the prevention of diabetes induced cardiovascular and renal complications.