PART- I: ISOLATION OF SALACINOL FROM ANTI α- GLUCOSIDASE FRACTION OF *Salacia reticulata*

PART- II: INVESTIGATION OF PROTEINS RESPONSIBLE FOR ENDOTOXIN ACTIVITY IN *Bacillus thuringiensis* SRI LANKAN ISOLATES AND ITS INSECTICIDAL ACTIVITY TOWARDS HOUSE FLY

A thesis submitted to the Faculty of Science,
University of Colombo

In partial fulfillment of the Requirements for the Degree of Master of Applied Organic Chemistry

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(2007/AOCH/08)
November 2011

Abstract - I

Salacia based nutraceuticals become common in Sri Lankan market, it is important to stipulate quality control standards. Thus isolation of active compounds is crucial factor to use as a marker in quality control & standardization. Salacinol is one of the three active anti-diabetic compounds reported from *Salacia reticulata*. Since active compounds are needed in the Quality control and standardization of plant drugs. Therefore Salacinol as one of the major active compound needed to be isolated and authenticated.

The present study was started with the fraction of *salacia* stem which was separated by bio-assay guided separation.

HPLC was sought as the final separation technique and C18 column in reverse phase was selected. In the HPLC separation of the active fraction three compounds were separated at retention time of 3.104 min, 5.121 min and 7.708 min (Fig 4.5) at a flow rate of 0.5ml/min in 80% methanol as the mobile phase. Compound eluted at 3.104 min was the major peak.

IR analysis of major compound showed prominent absorption bands at 3435.81cm^{-1}, 1634.65cm^{-1}, 1399.74cm^{-1}, 1232.57cm^{-1}, 1070.56cm^{-1}, 673.54cm^{-1}.

IR spectrum of the major compound is much close to the IR spectrum reported for Mangiferine. Therefore NMR and/or Mass Spectroscopic analysis should be done for the further clarification.

Abstract - II

Current control of the house fly relies on chemical insecticides, however, with the development of resistance and increasing concerns about human health and environmental residues, alternative strategies to control them are required. In this study, we used several isolates of *Bacillus thuringiensis (Bt)*, available in department of Chemistry of University of Colombo to extract cry proteins. *B. thuringiensis* isolates were grown in Luria Bertani broth and protein extraction was done with NaBr step gradient. Furthermore proteins were fractionated by SDS-PAGE in a 10% acrylamide gel and stained with Coomassie blue. Bands corresponding to proteins with molecular masses of ~140 kDa in line 3, 4, 5 and 6. Molecular masses of ~70 kDa were observed in line 4, 5 and 6. There were no expected bands in line 1 and 2.