

## **LIQUID CRYSTAL PROPERTIES OF SYNTHESIZED GLYCOLIPID, $\beta$ -SITOSTERYL- $\beta$ -D-GLUCOPYRANOSIDE**

**D.M.D.S. Dissanayake<sup>1</sup>, A.D.L.C. Perera<sup>2\*</sup> and D.N. Karunaratne<sup>2</sup>**

<sup>1</sup>*Postgraduate Institute of Science, University of Peradeniya, Sri Lanka*

<sup>2</sup>*Department of Chemistry, Faculty of Science, University of Peradeniya, Sri Lanka*

*\*chandanip@pdn.ac.lk*

Glycolipids are lipids containing a monosaccharide or a polysaccharide group. Different kinds of glycolipids can be prepared by changing the alkyl group and the carbohydrate group. The studies of such glycolipids have shown that they possess liquid crystalline properties as well as surfactant property. Here we report the synthesis of  $\beta$ -sitosteryl- $\beta$ -D-glucopyranoside and observation of both lyotropic and thermotropic liquid crystal properties. Initially penta-O-acetyl- $\beta$ -D-glucopyranoside was synthesized by the reaction of D-glucose with acetic anhydride in the presence of anhydrous sodium acetate. This on reaction with  $\beta$ -sitosterol in the presence of borontrifluoride etherate (BF<sub>3</sub>.Et<sub>2</sub>O) yielded  $\beta$ -sitosteryl-2,3,4,6-tetra-O-acetyl- $\beta$ -D-glucopyranoside. The final product  $\beta$ -sitosteryl- $\beta$ -D-glucopyranoside was obtained by treatment with a calculated amount of sodium methoxide.  $\beta$ -Sitosteryl- $\beta$ -D-glucopyranoside clearly showed both lyotropic liquid crystal properties in various solvents such as acetone, methanol, ethylacetate etc., as well as thermotropic properties. These properties are different from those observed for the peracetylated precursor  $\beta$ -sitosteryl-2,3,4,6-tetra-O-acetyl- $\beta$ -D-glucopyranoside.

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