Rotation of Polarized Light by Chiral Monosaccharides

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The chiral structure of glucose, fructose, and galactose rotate plane polarized light. This angle changes depending on the concentration of sugar in a solution of sugar and water. The purpose for this research was to determine the angle of rotation of polarized light at different concentrations of optically active monosaccharides. It was hypothesized that this angle could be measured with a homemade polarimeter device. This device was engineered and assembled and the data obtained was graphed. The graph showed that there is a correlation between concentration and angle of rotation. It was concluded that the angle of rotation could be measured with a homemade polarimeter instrument, and the angle of rotation was concentration dependent and varied at different concentrations.