ABSTRACT

SYNTHESIS, CHARACTERIZATION AND SCREENING ANTICANCER ACTIVITY OF SOME ORGANOTIN(IV) BENZOATES AGAINST LEUKEMIA CELL L-1210

by

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Organotin(IV) benzoate compounds were prepared by two step reactions. The first is the formation of hydroxide compounds from dibutyltin(IV) dichlorides, diphenyltin(IV) dichlorides and triphenyltin(IV) chloride which were reacted with NaOH. The second step is the reaction of hydroxide compounds with benzoic acid to produce dibutyltin(IV) dibenzoates, diphenyltin(IV) dibenzoates and triphenyltin(IV) benzoate as white solid with percent yield of 95.4, 91 and 94.4%, respectively at optimum refluxed time of 4 hours. The identification of the products were done by analyzing them with IR-spectroscopy and microanalytical data with microelemental analyzer.

The characterization of the products is shown by the present of C=O stretch from benzoate group in dibutyltin(IV) dibenzoates, diphenyltin(IV) dibenzoates and triphenyltin(IV) benzoate at 1600.97; 1691.5 and 1623.57 cm⁻¹, respectively. The result of microanalytical data indicated that the theoretical value of the products compared to the analytical result were < 5%, so the compounds synthesized are said to have close as pure compounds.

The benzoate compounds were then screened anticancer activity against leukemia cell L-1210. The cell used in the anticancer activity test was obtained from white mouse female type of DBA (Dilute Brown Non-Agouti Mouse) of 8 months old. The IC₅₀ values of dibutyltin(IV) dibenzoates, diphenyltin(IV) dibenzoates and triphenyltin(IV) benzoate were 19.58, 9.21 and 5.32 µg/mL, respectively.