

**Andre Harsono, 2019, Isolation of Lignan from The Roots of *Willughbeia coriacea* and Anticancer Activity. This final project is supervised by Dr. Mulyadi Tanjung, M.S and Tjitjik Srie Tjahjandarie, Ph.D., Department of Chemistry, Faculty of Science and Technology, Universitas Airlangga**

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### ABSTRACT

*Willughbeia coriacea* Wall. is a plant belonged to the family of Apocynaceae with the local name known as 'dangu'. The objective of the research are to isolate and determine the molecule structure of lignan compound from root of *Willughbeia coriacea* and also determine the anticancer activity toward HeLa cancer cells. The extraction of lignan compound from root of *Willughbeia coriacea* was done using maceration method with methanol at the room temperature. Fractionation and purification were carried out using gravity column chromatography and radial chromatography which resulted pinoresinol and aliterinate A compounds. The structure of pinoresinol and aliterinate A were determined using spectroscopy method including UV, IR, 1D NMR ( $^1\text{H}$  and  $^{13}\text{C}$ ) and 2D NMR (HMQC and HMBC). The anticancer activity test of the pinoresinol and aliterinate A compound against cancer cells HeLa showed the  $\text{IC}_{50}$  value of  $90 \pm 2.11$  ppm and  $83 \pm 1.13$  ppm respectively that were categorized inactive.

**Keywords :** *Willughbeia coriacea*, lignan , pinoresinol, aliterinate A, HeLa cells