

ABSTRACT

Salicin compound was extracted with water from willow trees (*Salix tetrasperma*, *salix babylonica*) and Pashu padauk (*pterocarpus indicus*). Maximum amount of Salicin obtained from barks, leaves and stems at optimum extraction conditions 100 °C, 5 hours extraction time with solid to water ratio 1:5 for 60 mesh size particles were 1.2%, 1.3%, 1% for *Salix tetrasperma* and 1.4%, 0.9% and 1% for *Salix babylonica* respectively by TLC method. The Salicin glycoside in the bark, leaf and stem of Pashu padauk were 0.8%, 0.1% and 0.3% and Salicin was isolated from other glycosides using preparative thin layer chromatography method with (9:2:2) volume ratio ethyl acetate : acetic acid : water solvent system. Confirmation and comparison of the isolated compound was made by determining the melting point, UV and IR spectra of the isolated Salicin compound with the standard Salicin. Calibration curve for quantitative analysis of salicin content in the seasonally collected barks, leaves and stems extract were determined with UV spectrometer using standard Salicin compound. Maximum amount of helicin compound, 83 percent was obtained by oxidation of Salicin extracted from *babylonica* with 10% nitric acid at 35 °C for 25 hr aging time. Thirty two percent of Salicylaldehyde was obtained by hydrolysis of helicin compound with 2 M sulphuric acid at 100 °C for 3 hrs. Salicyladoxime was obtained by the reaction of prepared Salicylaldehyde from this research work with hydroxylamine hydro chloride with three different methods. The Salicyladoxime obtained were 10 % with general method, 16.2 % with cold method and 52 % with warm method. The extracted properties of synthesized Salicyladoxime was determined with 0.3 M CuSO₄ (a concentration nearly same as the copper leaching from Kye Ni Thung) and compared with the well known copper extraction solution LIX 860 & LIX 984. The results show that the extracted property of the prepared 0.1 M Salicyladoxime in kerosene is 84% based on the initial wt of the copper solution.

Keywords: Salicin, *Salix babylonica*, Helicin, Salicylaldehyde, Salicyladoxime