

Comparison of Phenolic and Urushiol Contents of Different Parts of *Rhus verniciflua* and Their Antimicrobial Activity

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Abstract : *Rhus verniciflua* is commonly known as a lacquer tree in Korea. Stem barks of *R. verniciflua* have been used as an immunostimulator in traditional medicine. It contains phenolic compounds and is known for diverse biological activities such as antioxidant and antimicrobial activity. However, it also causes allergic dermatitis due to urushiols derivatives. For the development of active natural resources with less toxicity, the content of phenolic compounds and urushiols of different parts of *R. verniciflua* such as stem barks, lignum and leaves were quantitated by colorimetric assay and HPLC analysis. The urushiols content were the highest in stem barks, and followed by leaves. The lignum contained trace amount of urushiols. The phenolic contents, however, were the most abundant in lignum, and followed by leaves and stem barks. These results clear showed that the content of urushiols and phenolic differs depending on the parts of *R. verniciflua*. Antimicrobial activity of different parts of *R. verniciflua* against fish pathogenic bacteria was also investigated using *Edwardsiella tarda*. Lignum of *R. verniciflua* was the most effective in antimicrobial activity against *E. tarda* and phenolic constituents are suggested to be active constituents for activity. Taken together, phenolic compounds are responsible for antimicrobial activity of *R. verniciflua*. The lignum of *R. verniciflua* contains high content of phenolic compounds with less urushiols, which suggests efficient antimicrobial activity with less toxicity. Therefore, lignum of *R. verniciflua* are suggested as good sources for antimicrobial activity against fish bacterial diseases.

Keywords : different parts, phenolic compounds, *Rhus verniciflua*, urushiols

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