Sophoraflavanone G from \textit{Sophora pachy-carpa} Enhanced the Antibacterial Activity of Gentamycin against \textit{Staphylococcus aureus}

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In this study the enhancement effect of \textit{Sophora pachy-carpa} roots' acetone extract on the antibacterial activity of gentamycin was evaluated against \textit{Staphylococcus aureus}. Disc diffusion and broth dilution methods were used to determine the antibacterial activity of gentamycin in the absence and presence of plant extract and its various fractions separated by TLC. A clinical isolate of \textit{S. aureus} was used as test strain. The active component of the plant extract involved in enhancement of gentamycin's activity had $R_f = 0.72$ on a TLC plate. The spectral data ($^1\text{H NMR, } ^{13}\text{C NMR}$) of this compound revealed that this compound was 5,7,2',4'-tetrahydroxy-8-lavandulylflavanone (sophoraflavanone G), previously isolated from \textit{Sophora exigua}. In the presence of 0.03 $\mu$g/mL of sophoraflavanone G the MIC value of gentamycin for \textit{S. aureus} decreased from 32 to 8 $\mu$g/mL (a four-fold decrease). These results signify that the ultra-low concentration of sophoraflavanone G potentiates the antimicrobial action of gentamycin suggesting a possible utilization of this compound in combination therapy against \textit{Staphylococcus aureus}.

\textit{Key words:} Antibacterial Activity, Sophoraflavanone G, Synergism