Isoflavonoids from the root barks of millettia schliebenii

Odao Kichere
MSc (Chemistry)
University of Dar es Salaam, College of Natural and Applied Sciences, 2019

The phytochemical investigations reported in this dissertation were aimed at the isolation of biologically active and other constituents from the root barks of *Millettiaschliebenii* Harms (Fabaceae). The plant species belongs to *Millettia*, a genus of Tanzanian plants that is known for numerous therapeutic indications such as antiviral, bactericidal, anti-inflammatory, insecticidal, and pesticidal. Three isoflavonoids were isolated from the methanolic extract of the root barks of *Millettiaschliebenii* using chromatographic technique. Structures of the isolated compounds were identified by NMR and MS techniques as maximaisoflavone C (**2.26**), 7,2′-dimethoxy-4′,5′-methylenedioxyisoflavone (**2.27**) and durlettone (**2.28**). The disc diffusion method was used to test for activity of crude extract against both Gram-negative (*Escherichia coli*, *Salmonella typhi* and *Klebsiella pneumonia*) and Gram-positive (*Staphylococcus aureus*) bacteria. Isolated compounds were tested using broth micro-dillusion method against Gram negative (*Escherichia coli*) and Gram positive *Bacillus subtilis*). The crude extract and the three compounds were inactive in antibacterial assays at a concentration of 100 mg/mL for crude extract and 1 mg/mL for isolated pure compounds. Thus, the reported results from this study suggest the foundation for more investigations on antibacterial agents from other parts (leaves and stems barks) of *M. schliebenii*or other species in the genus *Millettia*. Evaluation of antitrypanosomal activities were yet to be accomplished at the collaborating laboratory up to the time of submission of this dissertation.