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ANTIBACTERIAL ACTIVITY AND TOXICITY OF *Terminalia ferdinandiana* (KAKADU PLUM) FRUIT EXTRACT.

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**Introduction:** *Terminalia ferdinandiana* (TF) is an endemic Australian native plant long used as a food and a medicinal agent by Indigenous Australians. Yet the medicinal bioactivities of this plant are poorly studied.

**Methods:** TF extracts were prepared with various solvents, dried and then re-dissolved in water. Antibacterial activity of these TF preparations was determined by growth inhibition against a panel of pathogenic bacteria and fungi. Toxicity (LC\textsubscript{50}) was assessed by the *Artemia franciscana* (brine shrimp) nauplii bioassay.

**Results:** All extracts displayed antibacterial activity in the disc diffusion assay. The methanol extract proved to have the broadest specificity, inhibiting the growth of 13 of the 14 bacteria tested (93\%). Individual MIC’s were as low as 30 \(\mu\)g/ml for some bacteria. The deionised water extract inhibited the growth of 11 of the 14 bacteria tested (79\%). The ethyl acetate, chloroform and hexane extracts inhibited 21\%, 29\% and 14\% respectively. TF methanolic extracts were equally effective against Gram-positive (100 \%) and Gram-negative bacteria (90 \%). All other extracts were more effective at inhibiting the growth of Gram-positive bacteria. The water, ethyl acetate, chloroform and hexane extracts inhibited the growth of 100, 50, 50 and 50 \% Gram-positive bacteria respectively. In contrast, they inhibited the growth of 70, 10, 20 and 0 \% Gram-negative bacteria respectively. All TF extracts were either non-toxic (ethyl acetate, chloroform, hexane) with no significant increase in mortality induction, or of low toxicity (LC\textsubscript{50}>1000 \(\mu\)g/ml) (methanol, deionised water) in the *Artemia franciscana* bioassay.

**Conclusions:** The low toxicity of the TF extracts and their inhibitory bioactivity against a range of bacteria validate traditional Aboriginal usage of the Kakadu plum and indicates its medicinal potential as well as its value as a rich source of natural vitamin C.