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### Antimicrobial activity of propolis and propolis related products on some pathogenic bacteria

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The present study investigated two raw propolis samples from Latvia and two processed commercial propolis products (capsules and tincture). The raw propolis samples were collected from Latvia (Juris Milins, Kronvalda iela 32 Jelgava LV-3004 and Anatolij Sinicin IV-Linija, 3 daugavpils LV-5417), while the commercial propolis products were obtained from retailers in Cork Ireland. The raw propolis was extracted using 70% ethanol, the capsules using 95% ethanol and the tincture using mono propylene glycol at a 1:2 ratio. The wax content of raw propolis samples was measured using 2 different methods and was in a range of 4.5-10%, the later method2 was proposed for the removal of wax from propolis as it yielded more purified wax content. Furthermore, the present study measured the total polyphenol (TP) and total flavonoid (TF) content, it was determined that the glycerol extract of propolis had the highest TP and TF ranging from 381.98-1066.84mg/ml and 793.5-909.09mg/ml respectively. It was observed that the water extracts in comparison to the ethanolic extract

had lower TP and TF content (47.61-220.14mg/ml and 13.37-44.28mg/ml). A correlation between the TP and TF and the antimicrobial activity of propolis was observed, with raw propolis samples and propolis capsules shown to be effective against all tested microorganisms (*E. faecalis* ATCC 47077, *S. epidermidis* ATCC 14490, *E. coli* ATCC 25922) using the microdilution method. For propolis to be accepted into modern medicine a validated method for its quality, safety and constituent profile must be developed. Further investigations are also required in improving its efficacy by analyzing it synergy with other antimicrobial compounds.



### Biography

Ruth Smith is currently completing her BSc Hons degree in Herbal Science at the age of 20 from the Institute of Technology.

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