

## **Ananas comosus Peels Extract as a New Natural Cosmetic Ingredient: Oil-in-Water (O/W) Topical Nano Cream Stability and Safety Evaluation**

### **ABSTRACT**

Ananas comosus peels (AcP) are among the agro-industrial biomasses contributing to a significant volume of waste in Malaysia. Thus, the AcP extract (AcPE) may prove useful for other applications, such as an ingredient in a nanocream for controlled delivery for dermal application. Therefore, this study aimed to develop an oil-in-water (O/W) nanocream using ingredients derived from the AcPE and test its stability alongside safety evaluation. The extract is a rich source of polyphenolic compounds viz., catechin, quercetin, and gallic acid. The study discovered that the optimized AcPE nano cream was stable against coalescence during the accelerated test but was influenced by Ostwald ripening over 6 weeks of storage at 4°C. Safety assessments affirmed the AcPE nano cream to be free of microbial contamination and heavy metals. The findings conveyed that the A. comosus nano cream is a good cosmetic ingredient and may contribute to the cosmeceutical industry's new and safe topical products.