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TITLE: The efficacy of the cream containing the combined extracts of *Saccharum officinarum* and *Salacca edulis*

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ABSTRACT BODY:

Introduction:

In aesthetic and antiaging cream, there is often a strategic combination of peeling (such as glycolic acid) and whitening agents (such as arbutin, hydroquinone). The objective of this study is to look for naturally derived peeling and whitening agents that can work synergistically.

Methods Used: The study has been performed on the efficacy of *Saccharum officinarum* (SO) extract and *Salacca edulis* (SE) extract as the naturally derived whitening agents from the Indonesia rain forest. *Saccharum officinarum* was chosen because of its natural peeling property while *Salacca edulis* was chosen because of its whitening activities obtained from previous studies. The cream containing 5% SO, cream containing 3% SE and cream containing combination of 3%SO and 5% SE have been made to investigate the whitening efficacy of the individual actives as well as the combined actives. The placebo cream contains the same ingredients minus the extract as active. The group of volunteers were carefully selected in terms of gender, habitat and skin condition. Each panelist applies both the test and placebo cream on each side of their forearm twice a day. At the time intervals 0, 7, 14 and 30 days, the skin was analysed with Mexameter.

Results Obtained: The results show that the cream containing SO has better whitening efficacy compared to that of the cream with SE as the active. However, the cream containing the combined actives of SO and SE has the best efficacy of them all and indicated the synergy efficacy of the glycolic acid from SO and the flavonoid from SE. The Single Closed Patch Test (SCPT) and the Repeated Open Patch Test did not show any irritation.

Discussion and Conclusion: This study proves the synergistic effect of *Saccharum officinarum* and *Salacca edulis* as naturally derived whitening agents. The cream containing combined extract was proven to be safe for the skin. On the contrary, most of the skin care containing glycolic acid can often cause skin irritation.

Our next step of the experiment is to compare safety and the whitening efficacy of these herbal actives versus the actual alpha hydroxyl acids and whitening agents used in cosmeceutical preparation.