**THE EFFECT OF MARULA OIL ON THE RELEASE OF MADECASSOSIDE**

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| **ABSTRACT** Specifically, the impact of natural oils on drug release in cream formulations was investigated through UV-Vis Spectrophotometry analysis. Transdermal drug delivery has become increasingly important in the field of medicine, offering an effective method for delivering drugs through the skin to achieve desired therapeutic effects. [1] Among the various approaches used in transdermal applications, topical creams have gained significant attention. [2] The aim of this study was to enhance the drug release from creams, a commonly employed transdermal drug delivery method, by formulating them with marula oil. Specifically, the impact of marula oil on drug release in cream formulations was investigated through UV-Vis Spectrophotometry analysis. The experimental findings clearly indicate that the inclusion of marula oil enhances the drug release in creams. To compare the release profiles, various kinetic models such as zero-order, first-order, Higuchi, and Korsmeyer Peppas were employed. The focus of this study centered on investigating the release of the active ingredient madecassoside, derived from the Centella asiatica plant. Madecassoside is widely recognized in the cosmetic industry for its beneficial properties, including soothing the skin, promoting healing, and combating signs of aging. [3] In conclusion, the inclusion of marula oil in cream formulations was found to increase drug release compared to the base formulation. Release performance in the formulations was observed for 120 minutes. In the cream formulation reinforced with marula oil, it provided 38% permeability by mass at the end of the 120th minute. This study highlights the potential of marula oil as an effective ingredient in transdermal drug delivery, particularly for enhancing the release of madecassoside in topical creams. Further research and optimization of formulations can lead to improved therapeutic outcomes and enhanced patient convenience.**References:** [1] Harneet Marwah, Tarun Garg, Amit K. Goyal, and Goutam Rath. (2016). Permeation enhancer strategies in transdermal drug delivery. Drug Delivery (23), 564-578.[2] Ansel HC, Popovich NG, Allen LV. (1995). Pharmaceutical dosage forms and drug delivery systems.[3] Guangtao Jia, Xiuyang Lu. (2008). Enrichment and purification of madecassoside and asiaticoside from Centella asiatica extracts with macroporous resins. Journal of Chromatography A, 1193(1-2), 136-141. |

# Keywords: Topical Drug Delivery, Madecassoside, Kinetic model, Marula oil