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Elucidation profile analysis syzygium cumini extract to be developed as oral anti-mucositis gel

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Abstract

Syzygium cumini is a traditional medicinal plant that has been used to treat various ailments. This study is conducted to characterise the extract contents, rheological, release, and texture profile of Syzygium cumini gel to be developed as anti-mucositis gel for dental applications. To determine the phytochemical content, Supercritical Fluid Extraction, and Soxhlet extractions were conducted. Whereas rheological characterisation, release, and texture profiles of five different gels were formulated using SC leaves extracted using sequential cold percolation (toluene, petroleum ether, acetyl acetate, acetone, and water extract). The rheological, release and texture profiles of the gels were then measured using rheometer, incubator shaker, and texture analyser, respectively. It was found that SC leaves extracted using Soxhlet contains the highest total phenolic and catechin content, while epicatechin content was highest in the extract of Supercritical Fluid Extraction with carbon dioxide as solvent at 150 bar. Regarding the gels, water extract gel had the best rheological profile. Although water extract had low permeability coefficient based on the release profile test, there was statistically significance difference in term of permeation rate flux from other gels (P<0.05). Phytochemical content and other related data were successfully documented to help in elucidating the best dental gel to be developed as antimucositis gel.

Author Keywords

antimucositis; catechin; dental; epicatechin; gel; Rheology; Soxhlet; Supercritical fluid extraction

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