

Uji aktivitas antioksidan dan stabilitas fisik sediaan gel yang mengandung ekstrak Metanol kulit batang manggis hutan (*Garcinia bancana* Miq.) = Antioxidant activity and physical stability test of gel preparations containing Metanol extract stem bark forest mangosteen (*Garcinia bancana* Miq.)

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Abstrak

Ekstrak metanol kulit batang manggis hutan (*Garcinia bancana* Miq.) diketahui mengandung epikatekin yang memiliki aktivitas antioksidan tinggi. Penelitian ini bertujuan untuk mengetahui aktivitas antioksidan dan stabilitas fisik sediaan gel yang mengandung ekstrak metanol kulit batang manggis hutan dalam konsentrasi yang bervariasi yaitu 10xIC₅₀ (0,004%), 30xIC₅₀ (0,012%) dan 90xIC₅₀ (0,036%) (b/b) dengan basis karbomer. Aktivitas antioksidan dalam sediaan gel dihitung berdasarkan nilai IC₅₀ dengan metode peredaman radikal DPPH. Uji stabilitas fisik dilakukan dengan pengamatan organoleptis dan pH gel yang disimpan pada suhu rendah (4±2oC), suhu kamar (27±2oC), suhu tinggi (40±2oC) dan uji cycling test. Nilai IC₅₀ ekstrak metanol kulit batang manggis hutan sebesar 4,37 ppm. Nilai IC₅₀ sediaan gel formula I (0,004%) 104,92 ppm, formula II (0,012%) 85,91 ppm, formula III (0,036%) 78,87 ppm dan blanko positif (gel kuersetin) 57,025 ppm. Berdasarkan nilai IC₅₀ disimpulkan bahwa gel kulit batang manggis hutan 0,036% memiliki aktivitas antioksidan paling tinggi dibandingkan formula I (0,004%) dan formula II (0,012%) tetapi lebih rendah dari blanko positif (gel kuersetin). Sediaan gel ekstrak metanol kulit batang manggis hutan secara fisik terbukti stabil dalam berbagai suhu penyimpanan dan cycling test.

.....Methanol extract stem bark forest mangosteen (*Garcinia bancana* Miq.) is known to contain epicatechin which had high antioxidant activity. This study was used to know the antioxidant activity and physical stability of gel preparations containing methanol extract stem bark forest mangosteen in various concentrations were 10xIC₅₀ (0,004%), 30xIC₅₀ (0,012%) and 90xIC₅₀ (0,036%) (w/w) on the basis of carbomer. The antioxidant activity in gel preparation was calculated based on the value of IC₅₀ DPPH radical reduction method. Physical stability test was conducted by organoleptic observations and pH gel which was stored at low temperature (4±2°C), room temperature (27±2°C), high temperature (40±2°C) and cycling test. The IC₅₀ value of methanol extract stem bark forest mangosteen was 4,37 ppm. The IC₅₀ value of stocks gel formula I (0,004%) 104,92 ppm, formula II (0,012%) 85,91 ppm, formula III (0,036%) 78.87 ppm and positive blank (quercetin gel) 57,025 ppm. Based on the IC₅₀ value concluded that methanol extract stem bark forest mangosteen gel 0,036% had the highest antioxidant activity compared to formula I (0,004%) and formula II (0,012%) but lower than the positive blank (quercetin gel). Gel preparations of methanol extract stem bark forest mangosteen were proven physically stable in a wide range of storage temperatures and cycling test.