

**OPTIMASI FORMULA EMULGEL KOMBINASI KATEKIN GAMBIR
(*Uncaria gambir* Roxb.) DENGAN MINYAK NYAMPLUNG (*Calophyllum
inophyllum* Linn.) SEBAGAI ANTIOKSIDAN DAN SUN PROTECTION
FACTOR**

ABSTRAK

Tumbuhan gambir (*Uncaria gambir* roxb.) mengandung senyawa flavonoid berupa katekin tidak kurang dari 90% dan minyak nyamplung (*Calophyllum inophyllum* Linn.) mengandung flavonoid, steroid, alkaloid, fenol dan tannin. Dengan kandungan tersebut gambir dan minyak nyamplung berpotensi sebagai tabir surya dan memiliki aktivitas antioksidan. Emulgel diformulasi untuk membantu menyatukan bahan aktif hidrofobik dalam fase minyak kemudian globul minyak terdispersi dalam fase air (emulsi M/A) yang selanjutnya emulsi ini dapat dicampurkan dalam basis gel. Tujuan dari penelitian ini untuk membuat sediaan emulgel dari katekin gambir yang dikombinasikan dengan minyak nyamplung, menentukan aktivitas antioksidan dan nilai *Sun Protection Factor* (SPF) serta menguji stabilitas sediaan emulgel. Sediaan emulgel diformulasikan menjadi 3 formula yaitu F1 (katekin gambir 0,5 % dan minyak nyamplung 15 %), F2 (katekin gambir 1 % dan minyak nyamplung 10 %) dan F3 (katekin gambir 2 % dan minyak nyamplung 5 %). Pengujian aktivitas antioksidan menggunakan metode Peredaman Radikal Bebas DPPH, sedangkan penentuan nilai SPF secara *in vitro* menggunakan spektrofotometer UV-Vis. Dari pengujian diperoleh hasil dimana aktivitas antioksidan dari sediaan emulgel formula 1 nilai IC₅₀ 583,2 ppm, emulgel formula 2 nilai IC₅₀ 351,2 ppm, emulgel formula 3 nilai IC₅₀ 195,7 ppm dan nilai SPF pada sediaan emulgel formula 1 sebesar 11,8, sediaan emulgel formula 2 sebesar 4,4, sediaan emulgel formula 3 sebesar 2,9. Dari penelitian ini dapat disimpulkan bahwa emulgel kombinasi katekin gambir dan minyak nyamplung memiliki aktivitas antioksidan yang lemah dan berpotensi sebagai tabir surya.

Kata kunci : Antioksidan, Emulgel, Katekin Gambir, Minyak Nyamplung, *Sun Protection Factor* (SPF)

OPTIMIZATION OF EMULGEL FORMULA COMBINATION OF GAMBIR CATECHINS (*Uncaria gambir* Roxb.) WITH NYAMPLUNG OIL (*Calophyllum inophyllum* Linn.) AS ANTIOXIDANTS AND SUN PROTECTION FACTOR

ABSTRACT

The gambir plant (*Uncaria gambir* roxb.) contains flavonoid compounds in the form of catechins not less than 90% and nyamplung oil (*Calophyllum inophyllum* Linn.) contains flavonoids, steroids, alkaloids, phenols and tannins. With these ingredients gambier and nyamplung oil have the potential as sunscreen and have antioxidant activity. Emulgel is formulated to help unite the hydrophobic active ingredients in the oil phase then the oil globules are dispersed in the water phase (O/W emulsion) which can then be mixed in a gel base. The purpose of this study was to make an emulgel preparation from gambir catechins combined with nyamplung oil, to determine antioxidant activity and the value of Sun Protection Factor (SPF) and to test the stability of the emulgel preparation. Emulgel preparations were formulated into 3 formulas, namely F1 (0.5% gambier catechins and 15% nyamplung oil), F2 (1% gambier catechins and 10% nyamplung oil) and F3 (2% gambier catechins and 5% nyamplung oil). Testing of antioxidant activity using the DPPH Free Radical Attenuation method, while determining the SPF value in vitro using a UV-Vis spectrophotometer. From the test, the results showed that the antioxidant activity of the emulgel formula 1 had IC₅₀ value of 583.2 ppm, the emulgel formula 2 value IC₅₀ 351.2 ppm, the emulgel formula 3 value IC₅₀ 195.7 ppm and the SPF value in the emulgel formula 1 preparation was 11.8, the formulation of emulgel formula 2 was 4.4, the formulation of emulgel formula 3 was 2.9. From this study, it can be concluded that the emulgel combination of catechins of gambier and nyamplung oil has weak antioxidant activity and has potential as a sunscreen.

Keywords: Antioxidants, Emulgel, Gambir Catechins, Nyamplung Oil, Sun Protection Factor (SPF)