

INTISARI

MARLINA, DIAN., 2013, OPTIMASI PROPORSI ASAM STEARAT DAN TRIETANOLAMIN KRIM TABIR SURYA LAPISAN PUTIH KULIT SEMANGKA SECARA SLD DAN DIUJI AKTIVITAS ANTIOKSIDAN TERHADAP RADIKAL DPPH, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Lapisan putih kulit semangka (*Citrullus vulgaris*, Schrad) mengandung antioksidan flavonoid yang bertindak sebagai pereduksi yang baik terhadap radikal OH dan superoksida. Penggunaan lapisan putih kulit semangka secara langsung dinilai kurang praktis, sehingga Hidayah (2012) membuatnya menjadi krim tabir surya. Penelitian ini bertujuan untuk mendapatkan formula optimum krim tabir surya lapisan putih kulit semangka terhadap proporsi asam stearat dan trietanolamin dengan metode *simplex lattice design* dan untuk mengetahui besarnya aktivitas antioksidan dalam sediaan tersebut.

Ekstrak kental lapisan putih kulit semangka diperoleh dengan maserasi menggunakan etanol 70%. Krim tabir surya lapisan putih kulit semangka dibuat dalam tiga formula berdasarkan *simplex lattice design*. Krim yang dihasilkan diuji terhadap parameter viskositas, daya lekat, dan daya sebar. Formula optimum diperoleh menggunakan *software Design Expert 8.0.6*. Hasil pengujian dibandingkan dengan hasil teoritis menggunakan uji-T dengan taraf kepercayaan 95%. Aktivitas antioksidan ditentukan dengan metode DPPH (*1,1 diphenil-2 pikrilhidrazil*) dan menggunakan rutin sebagai pembanding kemudian dihitung nilai IC_{50} dengan metode probit.

Hasil penelitian formula optimum krim tabir surya lapisan putih kulit semangka diperoleh pada proporsi asam stearat 50% dan trietanolamin 50%. Krim tabir surya lapisan putih kulit semangka (*Citrullus vulgaris*, Schrad) mempunyai aktivitas antioksidan dengan nilai IC_{50} sebesar 87,579 ppm.

Kata kunci : krim, tabir surya, antioksidan, optimasi, lapisan putih kulit semangka (*Citrullus vulgaris*, Schrad).

ABSTRACT

MARLINA, DIAN., 2013, THE OPTIMUM OF STEARIC ACID AND TRIETHANOLAMINE IN SUNSCREEN CREAM OF WATERMELON RIND WITH SLD AND TESTED ANTIOXIDANT ACTIVITY TO DPPH RADICAL, THESIS, THE FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Watermelon rind (*Citrullus vulgaris*, Schrad) contains antioxidants flavonoids that act as a good reducing for both of the OH radical and the superoxide. The direct use of watermelon rind is impractical, further in 2012, Hidayah made it as sunscreen cream. The purposes of this research are to obtain the optimum formula of sunscreen cream of watermelon rind on the proportion of stearic acid and triethanolamine using the simplex lattice design methods and to investigate the antioxidant activity in those pharmaceutical dosages form.

The viscous watermelon rind extract was obtained by the maceration using 70% ethanol. The sunscreen cream of watermelon rind was made in the three different formulas based on the simplex lattice design. The resulting cream was tested against the parameters of viscosity, adhesion power, and dispersive power. The optimum formula was obtained by using the Design Expert 8.0.6 software. Those results were furthermore compared with the theoretical results using T-test with the level of significance 95%. The antioxidant activity was determined by the DPPH method (*1,1 diphenil-2picrilhidrazil*) and using rutin as the comparator then the IC₅₀ values calculated by the probit method.

The results show that the optimum formula of sunscreen cream of watermelon rind was obtained on the proportion of 50% stearic acid and 50% triethanolamine. Whereas the sunscreen cream of watermelon rind (*Citrullus vulgaris*, Schrad) has the antioxidant activity with the IC₅₀ value of 87,579 ppm.

Key words: cream, sunscreen, antioxidants, optimization, watermelon rind (*Citrullus vulgaris*, Schrad).