ABSTRACT

Daidzein, a phytoesterogen component found in the soy isoflavones, has important roles to people's health such as anti-inflammatory effect, neuroprotective effect, reducing lipid levels and repairing the collagen layer of the skin. Daidzein can be obtained from ethanol extract of tempe. Daidzein can be used as potential active substances in the wound healing patch. In order to ensure efficacy, quality and safety, an appropriate analytical method was required for daidzein analysis in the wound healing patch.

This study aimed to develop a valid reversed phase HPLC method. Analytical method validation was conducted to assess validation parameters such as selectivity, linearity, method accuracy and precision, LOD and LOQ, and recovery extraction, so it can be used for determining the daidzein content in wound healing patch. Daidzein was analyzed using a reversed phase HPLC system consist of C_{18} column as stationary phase with methanol and redistilated water (70:30) as mobile phase, and the flow rate of 0,8 mL/min.

The results showed that the value of the resolution was 1.929. The value of correlation coefficient (r) was 0.9982 with the standard curve equation of y = 22567x + 13048. The LOD value was 0,1733 µg/mL and the LOQ value was 0,5777 µg/mL. The value of method recovery was 80- 110% with a precise of ≤ 7,3%, and the value of recovery extraction is 68-79%.

Keyword : daidzein, method validation, reversed phase HPLC, wound healing patch

ABSTRAK

Daidzein, suatu komponen fitoesterogen yang terdapat pada isoflavon kedelai, memiliki peran penting bagi kesehatan manusia seperti efek anti-inflamasi, efek neuroprotektif, menurunkan kadar lipid, serta dapat memperbaiki lapisan kolagen pada kulit. Daidzein dapat diperoleh dari ekstrak etanol tempe. Daidzein dapat dijadikan sebagai zat aktif potensial pada *wound healing patch*. Untuk menjamin khasiat, mutu dan keamanan maka dibutuhkan metode analisis yang sesuai untuk analisis daidzein dalam *wound healing patch*.

Penelitian ini bertujuan untuk mengembangkan metode HPLC fase terbalik yang valid. Validasi metode analisis dilakukan terhadap parameter validitas meliputi selektivitas, linearitas, akurasi dan presisi metode, LOD dan LOQ, serta *recovery* ekstraksi, sehingga dapat digunakan untuk penetapan kadar daidzein dalam *wound healing patch*. Daidzein dianalisis menggunakan sistem HPLC fase terbalik dengan fase diam berupa kolom C_{18} dan fase gerak campuran metanol dan akuabidestilata (70:30) dengan kecepatan alir 0,8 mL/menit.

Hasil penelitian menunjukkan nilai resolusi yaitu 1,929. Nilai koefisien korelasi (r) yaitu 0,9982 dengan persamaan kurva baku y = 22567x + 13048. Nilai LOD yaitu 0,1733 µg/mL dan LOQ yaitu 0,5777 µg/mL. Nilai persen *recovery* metode yaitu 80-110% dengan presisi ≤ 7,3 %, dan nilai persen *recovery* ekstraksi yaitu 68-79%.

Kata Kunci : daidzein, HPLC fase terbalik, validasi metode, *wound healing path*