ABSTRAK

Dalam proses memenuhi syarat standarisasi bahan baku produk bahan alam menjadi produk obat herbal terstandar, diperlukan metode analisis yang reliabel dan mampu memenuhi kebutuhan proses standarisasi bahan baku yang akan dibuat produk obat herbal terstandar. Proses standarisasi bahan baku ekstrak rimpang kunyit memerlukan metode analisis yang optimum dan valid guna menetapkan kadar kurkumin dalam ekstrak rimpang kunyit. Kurkumin di dalam ekstrak rimpang kunyit yang memiliki tiga bentuk senyawa yaitu kurkumin, demetoksikurkumin dan *bis*-demetoksikurkumin, sehingga diperlukan metode analisis dengan selektivitas dan sensitivitas yang cukup tinggi. Oleh karena itu, metode analisis kurkumin dalam ekstrak rimpang kunyit yang reliabel perlu ditetapkan.

Metode analisis kurkumin dalam ekstrak rimpang kunyit menggunakan HPLC telah dioptimasi dalam penelitian sebelumnya. Pada penelitian ini, dilakukan validasi metode analisis kurkumin dalam ekstrak rimpang kunyit menggunakan HPLC fase terbalik dengan fase gerak asetonitril:metanol:air (65:5:30 v/v), fase diam oktadesilsilan (C-18), serta laju alir 1,0 mL/menit. Penelitian ini bertujuan untuk memvalidasi parameter selektivitas, linearitas, rentang, akurasi, dan presisi.

Hasil penelitian menunjukkan bahwa metode yang diuji memiliki koefisien korelasi dan koefisien determinasi 0,999 (≥ 0,99) dan nilai resolusi 1,533 (≥ 1,5). Selain itu, akurasi *intra-day* dan *inter-day* adalah antara 97,03-100,08% dan 96,11-99,88% (di dalam 85%-110%) dan presisi *intra-day* dan *inter-day* adalah antara 0,10-1,65% dan 0,31-2,59% (≤ 4%). Metode yang diuji realibel sehingga dapat digunakan untuk menetapkan kadar kurkumin dalam ekstrak rimpang kunyit.

Kata Kunci: Ekstrak rimpang kunyit, HPLC, Kurkumin, Validasi

ABSTRACT

In the process of meeting the standardization requirements of product raw materials to become standardized herbal medicine, a reliable analysis method is needed for standardization process for the raw material that will be make into a standardized herbal medicinal products. The process of standardization of turmeric rhizome extract raw materials requires an optimal and valid analytical method to determine curcumin levels in turmeric rhizome extract. Curcuminoid in turmeric rhizome extract which has three forms of compounds namely curcumin, demethoxycurcumin and bisdemethoxycurcumin, so that analytical methods with high selectivity and sensitivity are needed. Therefore, the method of curcumin analysis in a reliable turmeric rhizome extract needs to be established.

Curcumin analysis method in turmeric extract using HPLC has been optimized in previous studies. In this study, the method of analysis of curcumin in turmeric rhizome extract was validated using reverse phase HPLC with the mobile phase of acetonitrile:methanol:water (65:5:30 v/v), octadesilsilan (C-18) stationary phase, and flow rate 1,0 mL / minute. This study aims to validate the parameters of selectivity, linearity, range, accuracy, and precision.

The results showed that the method tested had a correlation coefficient and determination coefficient of 0.999 (≥ 0.99) and a resolution value of 1.533 (≥ 1.5). In addition, intra-day and inter-day accuracy is between 97.03-100.08% and 96.11-99.88% (within 85% -110%) and intra-day and inter-day precision is between 0,10-1.65% and 0.31-2.59% (≤ 4%). The tested method is reliable so it can be used to determine the level of curcumin in turmeric rhizome extract.

Keywords: Curcumin, HPLC, Turmeric Rhizome Extract, Validation