Penentuan Komposisi Fase Gerak pada Isolasi Senyawa Bioaktif Hipolipidemik dan Uji Inhibisi Enzim HMG-CoA Reduktase Ekstrak Etanol Daun Kejibeling = Determination of Mobile Phase Composition on Isolation of Hypolipidemic Bioactive Compounds and HMG-CoA Reductase Enzyme Inhibition Test of Kejibeling Leaf Ethanol Extract

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Abstrak

Penyakit kardiovaskular yang dipengaruhi oleh kadar kolesterol seperti serangan jantung dan stroke dapat disembuhkan dengan penggunaan statin. Di sisi lain, statin memiliki efek samping seperti kerusakan pada otot dan hati. Penelitian ini bertujuan untuk menelusuri potensi dari daun kejibeling (Strobilanthes crispus) sebagai obat untuk menurunkan kolesterol melalui uji inhibisi terhadap enzim HMG-CoA reduktase oleh isolat dari ekstrak etanol daun kejibeling. Ekstrak etanol daun kejibeling didapatkan melalui proses ekstraksi dengan metode Ultrasound Assisted Enzymatic-Aqueous Two Phase Extraction (UAE-ATPE) dengan konsentrasi enzim selulase 30 mg/g serbuk daun kering, rasio pelarut untuk sistem ATP 33% etanol (b/b) dan 14 % amonium sulfat (b/b), suhu 60 , dan waktu 45 menit. Lima fraksi didapatkan dengan komposisi fase gerak optimal, yaitu etil asetat:metanol, 1:1 (v/v) dengan total 4 fraksi gabungan. Hasil analisis dari fraksi I dan fraksi II menunjukkan kemampuan inhibisi yang mendekati pravastatin dengan jenis inhibisi tidak kompetitif terhadap enzim HMG-CoA reduktase. Hasil analisis dari LC-MS/MS-QToF pada fraksi I dan fraksi II menunjukkan senyawa dengan aktivitas hipolipidemik, yaitu genistein, medicarpin, asam ?-linoleat, thymol, dan oleamide.

.....Cardiovascular diseases that are affected by cholesterol levels such as heart attacks and strokes can be cured with the use of statins. On the other hand, statins have side effects such as damage to the muscles and liver. This study aims to explore the potential of kejibeling leaves (Strobilanthes crispus) as a drug for lowering cholesterol through an inhibition test of the HMG-CoA reductase enzyme by isolating from the ethanol extract of kejibeling leaves. The ethanol extract of kejibeling leaves was obtained through an extraction process using the Ultrasound Assisted Enzymatic-Aqueous Two Phase Extraction (UAE-ATPE) method with a cellulase enzyme concentration of 30 mg/g dry leaf powder, the solvent ratio for the ATP system was 33% ethanol (w/w) and 14% ammonium sulfate (w/w), the temperature of 60?, and time 45 minutes. Five fractions were obtained with the optimum mobile phase composition, namely ethyl acetate:methanol, 1:1 (v/v) with a total of 4 combined fractions. The results of the analysis for fractions I and fraction II show inhibition abilities that are close to pravastatin with non-competitive inhibition of the HMG-CoA reductase enzyme. The results of the analysis of LC-MS/MS-QToF in fraction I and fraction II showed compounds with hypolipidemic activity, namely genistein, medicarpin, alpha-linolenic acid, thymol, and oleamide.