Dyennafebta, Helga Pristi, 2013, Analisis Cu(II) Menggunakan Metode *Dispersive Liquid-Liquid Microextraction* (DLLME)–Spektrofotometri UV-Vis dengan Reagen *1-(2-pyridylazo)-2-naphthol* (PAN) sebagai Pengompleks, skripsi ini di bawah bimbingan Dr. rer. nat. Ganden Supriyanto, M.Sc dan Dra. Usreg Sri Handajani, M.Si, Departemen Kimia Fakultas Sains dan Teknologi Universitas Airlangga

ABSTRAK

Ion logam Cu(II) termasuk salah satu logam berat yang dapat menyebabkan pencemaran di perairan. Meskipun masih dibutuhkan dalam tubuh manusia, namun apabila keberadaan Cu(II) melebihi ambang batas, secara alamiah akan dapat menyimpan potensi keracunan. Penelitian ini bertujuan untuk menganalisis Cu(II) dengan menggunakan kombinasi metode *Dispersive Liquid-Liquid Microextraction* (DLLME)-Spektrofotometri UV-Vis, mengetahui kondisi optimum yang meliputi konsentrasi pengompleks (PAN), pH, jenis larutan pendispersi, dan volume larutan pendispersi pada analisis Cu(II), menentukan parameter validasi yang meliputi limit deteksi, persen *recovery*, koefisien variasi, *enrichment factor*, linieritas, dan sensitivitas. Pada penelitian ini diperoleh limit deteksi sebesar 0,01 ppm, persen *recovery* sebesar 97,10%, koefisien variasi sebesar 0,92%, *theoretical enrichment factor* sebesar 16,67 kali, *true enrichment factor* 16,50 kali, nilai koefisien korelasi sebesar 0,999 pada rentang konsentrasi Cu(II) antara 0,03-0,30 ppm, dan sensitivitas sebesar 3,169 L/mg. Hasil yang diperoleh pada penentuan jenis larutan pendispersi optimum adalah etanol, volume larutan pendispersi yang optimum sebesar 50 μL, konsentrasi pengompleks (PAN) optimum adalah 0,04%, dan pH optimum adalah 5. Dari hasil penelitian dapat disimpulkan bahwa kombinasi metode DLLME-Spektrofotometri UV-Vis dapat digunakan untuk menganalisis Cu(II).

Kata kunci : DLLME-Spektrofotometri UV-Vis, Cu(II), PAN, ekstraksi

Dyennafebta, Helga Pristi, 2013, Analysis of Copper(II) using Dispersive Liquid-Liquid Microextraction (DLLME)-UV Vis Spectrophotometry Methods with 1-(2-pyridylazo)-2-naphthol (PAN) Reagent as Complexing Agent, final project was under guidance Dr. rer. nat. Ganden Supriyanto, M.Sc and Dra. Usreg Sri Handajani, M.Si, Chemistry Departement, Faculty of Science and Technology, Airlangga University

ABSTRACT

Metal ions Cu(II) is one of the heavy metals that can cause pollution in the waters. Although it is still needed in the human body, if the presence of Cu(II) exceeds the threshold, will naturally be able to save a potential poisoning. The objectives of this research were to analyze of Cu(II) by using a combination of methods Dispersive Liquid-Liquid Microextraction (DLLME)-UV-Vis Spectrophotometry, determine the optimum conditions that include concentration of complexing agent (PAN), pH, type and volume of disperser solution for analysis Cu(II), determine the validation of parameters which include limit of detection, percent recovery, coefficient of variation, enrichment factor, linearity, and sensitivity. In this study, the limit of detection was 0,01 ppm, percent recovery was 97,10%, the coefficient of variation was 0,92%, theoretical enrichment factor was 16,67 times, the true enrichment factor was 16,50 times, the correlation coefficient is 0,999 at concentrations of Cu(II) between 0,03 to 0,30 ppm, and sensitivity 3,169 L / mg. Results obtained in the determine the optimum of type and volume of disperser solution is ethanol and 50 μL, the optimum of concentration of complexing agent (PAN) was 0,04%, and the optimum of pH was 5. From the results of this study is concluded that the combination of DLLME-UV-Vis Spectrophotometry methods can be used to analyze Cu(II).

***Keywords**: DLLME-UV-Vis Spectrophotometry, Cu(II), PAN, extraction*