

Nurmansyah, R., O., N., 2018, Pengaruh Asam Askorbat, Urea, dan Kreatinin pada Analisis Glukosa Secara Potensiometri Menggunakan Modifikasi Elektroda Pasta Karbon/MIP. Skripsi ini di bawah bimbingan Dr. Miratul Khasanah, M. Si dan Dra. Usreg Sri Handajani, M. Si. Departemen Kimia, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh asam askorbat, urea, dan kreatinin pada analisis glukosa secara potensiometri menggunakan modifikasi elektroda pasta karbon/MIP. *Molecularly imprinted polimer* dibuat dengan mereaksikan glukosa sebagai *template*, ammonium peroksodisulfat sebagai *crosslinker*, dan polianilin (PANi) sebagai monomer fungsional dengan perbandingan mol 2:1:0,1. Elektroda dibuat dengan mencampurkan karbon aktif, parafin, dan MIP dengan perbandingan massa (%b/b) sebesar 40:40:20 pengukuran glukosa dilakukan pada larutan dengan pH 6. Dari penelitian diperoleh data faktor Nernst sebesar 30,24 mV/dekade, dengan jangkauan pengukuran $10^{-6} - 10^{-3}$ M, dan linieritas kurva kalibrasi (r) 0,9998. Urea tidak mengganggu analisis glukosa, sedangkan asam askorbat dan kreatinin dengan berbagai konsentrasi mengganggu analisis glukosa. Uji akurasi terhadap metode spektrofotometri menghasilkan nilai sebesar 75 – 97%.

Kata kunci: glukosa, elektroda pasta karbon MIP (*Molecularly Imprinted Polymer*), potensiometri, selektivitas.

Nurmansyah, R., O., N., 2018, Influence of Ascorbic Acid, Uric Acid, and Creatinine in Analysis of Glucose by Potentiometry Using Carbon Paste/MIP Electrode. This Final Project Supervised by Dr. Miratul Khasanah, M. Si and Dra. Usreg Sri Handajani, M. Si. Department of Chemistry, Faculty of Science and Technology, University of Airlangga, Surabaya.

ABSTRACT

Objective of this research is influence of ascorbic acid, uric acid and creatinine in analysis of glucose potentiometry using carbon paste/MIP electrode. MIP (Molecularly Imprinted Polymer) was synthesized by mixing glucose as template, ammonium peroxodisulfate as cross-linker, and polyanilin (PANi) as monomer by mole ratio of 2:1:0,1 has been extracted. The electrode was made by mass ratio (%w/w) between active carbon, MIP, and paraffin of 40:40:20. Potential measurement was done at pH 6. The research generated the factor Nernst was obtained 30.24 mV/decade, with measurement range from 10^{-6} until 10^{-3} M, and linearity of 0,9936. Uric acid in various concentration was found to have no impact on glucose analysis. Whereas ascorbic acid and creatine in various concentration interfered in the glucose analysis. Applying the electrode to analyze glucose in the serum showed the accuracy of 75 – 97% toward spectrophotometri method.

Keywords: glucose, carbon paste electrode molecularly imprinted polymer, potentiometry, selectivity.