

ABSTRAK

Rachmawati, Afrida. 2014. Pengaruh Temperatur dan pH Terhadap Kinerja Elektroda Selektif Ion Metanil Yellow Berbasis Aliquat 336-Kitosan Sebagai Carrier Membran. Tugas Akhir, Program Studi Farmasi Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dr. Atikah, Apt., M.Si. (2) Dr. Hermin Sulistyarti.

Penambahan bahan pewarna dalam makanan bertujuan untuk memberikan tampilan menarik. Elektroda selektif ion (ESI) metanil yellow berbasis aliquat 336-kitosan telah berhasil dibuat menggunakan membran dengan komposisi campuran kitosan dan aliquat 336 sebagai carrier membran, *polyvinyl chloride* (PVC) sebagai matriks polimer dan *dioctylphthalate* (DOP) sebagai pemlastis dengan rasio perbandingan (%berat) = 5: 0,5: 34,5: 60 (% b/b) yang dilarutkan dalam pelarut tetrahidrofuran (THF) (1:3 b/v). Namun belum diteliti pengaruh temperatur dan pH untuk pengukuran metanil yellow pada makanan. Tujuan penelitian ini adalah untuk mempelajari pengaruh pH dan temperatur terhadap ESI metanil yellow. Pengaruh temperatur dilakukan dengan mengukur potensial ESI pada rentang konsentrasi 10^{-5} - 10^{-2} M pada rentang temperatur 25-50 °C. Pengaruh pH dilakukan dengan mengukur potensial ESI pada rentang konsentrasi 10^{-5} - 10^{-2} M pada pH 3, 4, 5, 6, 7 dan 8 dengan penambahan asam klorida (HCl) dan natrium hidroksida (NaOH). Hasil penelitian menunjukkan bahwa kinerja ESI metanil yellow berbasis aliquat 336-kitosan menunjukkan kinerja ESI metanil yellow tidak dipengaruhi oleh temperatur 25-30 °C dan pH 6-7.

Kata kunci: metanil yellow, aliquat 336, kitosan, ESI, pengaruh pH, temperatur



ABSTRACT

Rachmawati, Afrida. 2014. The Influence of Temperature and pH to The Performance of Metanil Yellow Ion Selective Electrode Based on Aliquat 336-Chitosan as Carrier Membrane. Final Assignment, Pharmacy Study Program, Faculty of Medicine, Brawijaya University. Supervisors: (1) Dr. Atikah, Apt., M.Si. (2) Dr. Hermin Sulistyarti.

The addition of dyes in food aims to provide an appealing look. Metanil yellow ion selective electrode (ISE) based on aliquat 336-chitosan was successfully fabricated using membrane with the composition of the mixture of chitosan and aliquat 336 as carrier membrane, polyvinyl chloride (PVC) as the polymer matrix and dioctylphthalate (DOP) as a plasticizer with a ratio (% by weight) = 5: 0.5: 34.5: 60 (% w / w) were dissolved in tetrahydrofuran (THF) solvent (1:3 w / v). However, the influence of temperature and pH on the performance of metanil yellow ISE to determine metanil yellow in food have not been studied. The purpose of this research is to study the effect of pH and temperature on the performance of metanil yellow ISE. The effect of temperature is done by measuring the potential response of ISE in the metanil yellow concentration range 10^{-5} - 10^{-2} M in the temperature range 25-50 °C. Effects of pH is done by measuring the potential of ISE in the metanil yellow concentration range 10^{-5} - 10^{-2} M at pH 3, 4, 5, 6, 7 and 8 with the addition of hydrochloric acid (HCl) and sodium hydroxide (NaOH). The results showed that the performance of metanil yellow ISE-based aliquat 336-chitosan showed not affected by the temperature of 25-30 °C and pH 6-7.

Keywords: metanil yellow, aliquat 336, chitosan, ISE, effect of pH, temperature

