

INTISARI

ANJAS GEOFANI RAUF, 2023. PENGEMBANGAN METODE ANALISIS KADAR NITRIT BERDASARKAN REAKSI PENGKUPLINGAN DENGAN α -NAFTHILAMIN SECARA SPEKTROFOTOMETRI UV-VIS PADA AIR MINUM ISI ULANG WILAYAH MOJOSONGO, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA

Depot air minum isi ulang telah menyebar luas, sejalan dengan kebutuhan masyarakat terhadap air minum yang berkualitas serta aman untuk diminum. Syarat kualitas air minum secara kimiawi terhadap kandungan nitrit dalam air minum memiliki batas maksimum yaitu 3 mg/L. Penelitian ini bertujuan untuk mengetahui kandungan nitrit dalam air minum isi ulang di daerah Mojosongo, Surakarta.

Metode yang digunakan pada penelitian ini adalah spektrofotometri Uv-Vis dengan pereaksi Griess menggunakan senyawa pengkupling α -nafthilamin. Nitrit dalam suasana asam akan bereaksi dengan asam sulfanilat dan α -nafthilamin membentuk senyawa azo berwarna merah keunguan. Kemudian dilakukan Uji validasi metode meliputi uji linearitas, LOD & LOQ, Presisi, Sensitifitas, dan Akurasi. Dilanjutkan analisis kualitatif dan kuantitatif pada air minum isi ulang kemudian di analisis data.

Hasil penelitian ini menunjukkan modifikasi metode yang optimal dalam menentukan kadar nitrit dalam sampel air minum yaitu dengan menggunakan senyawa pengkupling α -nafthilamin 0,7%. Diperoleh nilai linearitas 0,999, nilai LOD dan LOQ yaitu 0,008 dan 0,024. Nilai sensitifitas 1,371, nilai presisi 1,67% dan nilai akurasi 100,1%. Kemudian dilanjutkan penetapan kadar pada depot air minum isi ulang menggunakan metode modifikasi α -nafthilamin 0,7% diperoleh kadar nitrit masing-masing depot yaitu 0,087 mg/L, 0,096 mg/L dan 0,079 mg/L.

Kata Kunci : air minum isi ulang, nitrit, α -nafthilamin, spektrofotometri uv-vis

ABSTRACT

ANJAS GEOFANI RAUF, 2023. DEVELOPMENT OF NITRITE LEVEL ANALYSIS METHOD BASED ON CUPLING REACTION WITH A-NAPHTHILAMIN BY SPECTROPHOTOMETRY UV-VIS IN REFILL DRINKING WATER IN MOJOSONGO AREA, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA

Refill drinking water depots have become widespread, in line with the community's need for quality drinking water that is safe to drink. The chemical requirements for drinking water quality for the nitrite content in drinking water have a maximum limit of 3 mg/L. This study aims to determine the content of nitrite in refill drinking water in the Mojosoongo area, Surakarta.

The method used in this study was spectrophotometry Uv-Vis with Griess reagent using α -naphthylamine coupling compound. Nitrites in an acidic environment will react with sulfanilat acid and α -naphthylamine to form purplish-red azo compounds. Then a method validation test was carried out including linearity tests, LOD & LOQ, Precision, Sensitivity, and Accuracy. Followed by qualitative and quantitative analysis on refill drinking water and then data analysis.

The results of this study indicate an optimal modified method for determining nitrite levels in drinking water samples using a 0.7% α -naphthylamine coupling compound. The obtained linearity value was 0.999, with LOD and LOQ values of 0.008 and 0.024, respectively. The sensitivity value was 1.371, precision was 1.67%, and accuracy was 100.1%. Subsequently, the determination of nitrite levels was conducted in refillable drinking water depots using the modified method with 0.7% α -naphthylamine, resulting in nitrite levels of 0.087 mg/L, 0.096 mg/L, and 0.079 mg/L for each depot.

Keywords: Refill drinking water, nitrite, α -naphthylamine, spectrophotometry uv-vis