

ANALISIS KANDUNGAN SULFUR PADA SEDIAAN SABUN MENGUNAKAN METODE TURBIDIMETRI

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ABSTRAK

Sabun yang mengandung sulfur umum digunakan untuk mengatasi berbagai gangguan kulit karena sifat antimikroba, antijamur, dan anti-akne. Namun, penggunaan sulfur dalam sediaan sabun perlu disesuaikan dengan ketentuan yang berlaku, mengingat potensi efek samping seperti iritasi, kekeringan, pruritus dan rasa terbakar pada kulit. Berdasarkan ketentuan Peraturan Menteri Kesehatan Republik Indonesia menetapkan batas kadar sulfur pada sediaan sabun sebesar 2-10%. Penelitian ini bertujuan untuk menganalisis kadar sulfur dalam sediaan sabun mandi yang dijual di pasaran menggunakan metode spektrofotometri UV-Vis secara turbidimetri. Penelitian ini dimulai dengan pengambilan sampel, preparasi sampel, analisis kualitatif, validasi metode dan penetapan kadar. Hasil validasi metode menunjukkan hasil persamaan regresi $y = 0,0097x + 0,0113$ dan nilai $r = 0,9993$, dengan batas deteksi sebesar $2,226 \mu\text{g/mL}$ dan batas kuantitasi sebesar $7,422 \mu\text{g/mL}$, uji perolehan kembali menunjukkan hasil yang baik dengan %*recovery* dalam rata-rata 91,43% dan presisi sebesar 1,76%. Hasil penelitian kadar sulfur sediaan sabun menunjukkan pada kedua sampel mengandung sulfur dengan kadar sampel A sebesar 3,76% dan sampel B sebesar 2,32%. Berdasarkan penelitian diketahui bahwa semua sampel memenuhi peraturan Peraturan Menteri Kesehatan Republik Indonesia dengan rentang kadar 2-10%.

Kata Kunci: Barium klorida, sabun, sulfur, turbidimetri

ANALYSIS OF SULFUR CONTENT IN SOAP PREPARATIONS USING THE TURBIDIMETRIC METHOD

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ABSTRACT

Sulfur-containing soaps are commonly used to treat various skin disorders due to the antimicrobial, antifungal, and anti-acne properties of sulfur. However, the use of sulfur in soap formulations must comply with applicable regulations, considering potential side effects such as irritation, dryness, pruritus, and a burning sensation on the skin. According to the regulations set by the Indonesian Ministry of Health, the permissible concentration of sulfur in soap preparations ranges from 2% to 10%. This study aims to analyze the sulfur content in commercial bath soap formulations using UV-Vis spectrophotometry with a turbidimetric method. The research involved sampling, sample preparation, qualitative analysis, method validation, and content determination. The method validation yielded a regression equation of $y = 0.0097x + 0.0113$ with a correlation coefficient (r) of 0.9993, a limit of detection (LOD) of 2.226 $\mu\text{g/mL}$, and a limit of quantitation (LOQ) of 7.422 $\mu\text{g/mL}$. The recovery test showed good results, with an average recovery of 91.43% and a precision of 1.76%. The sulfur content analysis revealed that both soap samples contained sulfur, with Sample A containing 3.76% and Sample B containing 2.32%. Based on these findings, all samples complied with the Indonesian Ministry of Health regulation, which stipulates a sulfur content range of 2–10%.

Keywords: *Barium chloride, soap, sulfur, turbidimetry*