POLITEKNIK KESEHATAN TANJUNGKARANG
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Pengaruh Penyimpanan Terhadap Zat Aktif Bahan Baku dan Sediaan Tablet Vitamin C dengan Metode Titrasi Iodimetri

xviii + 163 halaman, 4 gambar, dan 29 lampiran

ABSTRAK

Vitamin C merupakan senyawa yang rentan terhadap degradasi akibat suhu, cahaya, dan waktu penyimpanan, sehingga berpotensi menurunkan kadar zat aktifnya. Penelitian ini bertujuan untuk mengetahui pengaruh penyimpanan dengan variasi suhu dan waktu terhadap kadar zat aktif bahan baku dan sediaan tablet vitamin C. Penelitian dilakukan dengan menggunakan metode eksperimental dengan pendekatan *cross sectional*. Sampel berupa bahan baku vitamin C dan tablet vitamin C IPI 50 mg, disimpan pada suhu kamar (27°C) dan suhu hangat (36°C) selama 3 jam dan 6 jam. Pemeriksaan kadar dilakukan menggunakan metode titrasi iodimetri sesuai Farmakope Indonesia Edisi IV.

Hasil penelitian menunjukkan uji organoleptik tidak ditemukan perubahan baik sebelum dan sesudah perlakuan sampel, kadar vitamin C dalam bahan baku berada pada rentang 99,85% - 105,06%, dengan 60% sampel memenuhi syarat dan 40% tidak memenuhi syarat kadar. Sementara itu, kadar pada sediaan tablet berada pada rentang 95,9% - 103,8%, dan seluruh sampel memenuhi persyaratan kadar. Analisis statistik menggunakan uji Two Way ANOVA menunjukkan signifikansi sampel baku untuk factor suhu sebesar 0,141 dan waktu sebesar 0,362. Sedangkan sampel tablet untuk factor suhu sebesar 0,313 dan waktu sebesar 0,433. Kedua hasil signifikansi dinyatakan lebih dari 0,05. Dengan demikian, penyimpanan vitamin C pada suhu kamar (27°C) dan suhu hangat (36°C) selama 3 jam dan 6 tidak mempengaruhi kestabilan kadar vitamin C secara signifikan, baik pada bahan baku maupun sediaan tablet.

Kata kunci : Vitamin C, penyimpanan, suhu, waktu, bahan baku, tablet, titrasi iodimetri
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TANJUNGKARANG HEALTH POLYTECHNIC
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Effect of Storage on Active Substances of Raw Materials and Preparations of Vitamin C Tablets by Iodimetric Titration Method

xviii + 163 pages, 4 pictures, 29 attachments

ABSTRACT

Vitamin C is a compound that is susceptible to degradation due to temperature, light, and storage time, so it has the potential to reduce the level of its active substances. This study aims to determine the effect of storage with temperature and time variations on the level of active substances of raw materials and preparations of vitamin C tablets. The samples were in the form of vitamin C raw materials and IPI 50 mg vitamin C tablets, stored at room temperature (27°C) and warm temperature (36°C) for 3 hours and 6 hours. The level check was carried out using the iodimetry titration method in accordance with the Indonesian Pharmacopoeia Edition IV.

The results showed that organoleptic tests found no changes both before and after sample treatment, vitamin C levels in raw materials were in the range of 99.85% - 105.06%, with 60% of samples qualified and 40% not qualified levels. Meanwhile, the levels in the tablet preparation were in the range of 95.9% - 103.8%, and all samples met the level requirements. Statistical analysis using the Two Way ANOVA test showed the significance of the raw sample for a temperature factor of 0.141 and a time of 0.362. Meanwhile, the tablet sample for the temperature factor was 0.313 and the time was 0.433. Both significance results were expressed to be more than 0.05. Thus, storage of vitamin C at room temperature (27°C) and warm temperature (36°C) for 3 hours and 6 did not significantly affect the stability of vitamin C levels, both in raw materials and tablet preparations.

Keywords : Vitamin C, storage, temperature, time, raw materials, tablets, iodimetry titration
Reading list : 27 (1979-2024)