

ABSTRACT

Background: Reagents are the cause of analytical phase errors. The factor that affects reagent errors is the storage of work reagents. Storage of work reagents on a highly sensitive enzyme examination will affect the outcome of enzyme activity. One enzyme that an important role in the body is the Alkaline Phosphatase enzyme.

Research Objective: To determine the effect of the storage period of work reagents at room temperature on the Alkaline Phosphatase enzyme activity and the storage limit of work reagents of the Alkaline Phosphatase.

Research Methods: This type of research was a quasi-experimental with a post-test only control group design. The sample of work reagents divided into 4 groups that were immediately used, stored for 3 days, 6 days, 9 days. Alkaline Phosphatase enzyme activity data obtained 32, then analyzed with one-way ANOVA using SPSS 18.0 for windows.

Research Results: The results of the study indicated a difference in the average activity of the Alkaline Phosphatase enzyme. Statistical analysis showed $p(0.007) < 0.05$ meant that were a difference on the Alkaline Phosphatase activity with work stored for 0 days, 3 days, 6 days, 9 days with average respectively 314,88 U/L, 312,13 U/L, 308,75 U/L, 307 U/L. Work reagents stored for 6 days at AC room temperature of 20-25°C have influenced the Alkaline Phosphatase activity.

Conclusion: There was an effect on the storage of work reagents for 6 days at AC room temperature of 20-25°C on the activity of Alkaline Phosphatase enzyme and the storage limit of work reagents for 3 days.

Keywords: Work reagent, storage period, alkaline phosphatase enzyme activity

ABSTRAK

Latar Belakang: Reagen merupakan penyebab kesalahan tahap analitik. Faktor yang mempengaruhi kesalahan reagen yaitu penyimpanan reagen kerja. Penyimpanan reagen kerja pada pemeriksaan enzim sangat sensitif sehingga akan mempengaruhi hasil aktivitas enzim. Enzim yang berperan penting dalam tubuh adalah enzim *Alkaline Phosphatase*.

Tujuan Penelitian: Mengetahui pengaruh lama penyimpanan reagen kerja pada suhu kamar terhadap aktivitas enzim *Alkaline Phosphatase* dan batas penyimpanan reagen kerja *Alkaline Phosphatase*.

Metode Penelitian: Jenis penelitian ini adalah eksperimen semu dengan rancangan *post-test only control group design*. Sampel berupa reagen kerja yang dibagi menjadi 4 kelompok yaitu segera dipakai, disimpan selama 3 hari, 6 hari dan 9 hari. Data hasil pemeriksaan aktivitas enzim *Alkaline Phosphatase* diperoleh 32 data, kemudian dianalisis dengan *one-way ANOVA* menggunakan SPSS 18.0 *for windows*.

Hasil Penelitian: Hasil penelitian menunjukkan adanya perbedaan rerata aktivitas enzim *Alkaline Phosphatase*. Analisis statistik menunjukkan $p (0.007) < 0.05$ artinya ada perbedaan aktivitas enzim *Alkaline Phosphatase* menggunakan reagen kerja yang disimpan selama 0 hari, 3 hari, 6 hari, 9 hari dengan rerata secara berturut-turut yaitu 314,88 U/L, 312,13 U/L, 308,75 U/L, 307 U/L. Reagen kerja yang disimpan selama 6 hari pada suhu ruang ac 20-25°C sudah mempengaruhi aktivitas enzim *Alkaline Phosphatase*.

Kesimpulan: Ada pengaruh penyimpanan reagen kerja selama 6 hari pada suhu ruang ac 20-25°C terhadap aktivitas enzim *Alkaline Phosphatase* dan batas penyimpanan reagen kerja selama 3 hari.

Kata Kunci: Reagen kerja, lama penyimpanan, aktivitas enzim *alkaline phosphatase*.