

ABSTRACT

Background: Turbidity in lipemic serum interferes with many laboratory tests using photometric methods. Lipid particles in lipemic serum cause light scattering to the highest level during photometric readings, resulting in inaccurate results. The gold standard for handling lipemic serum is ultracentrifugation, but not all laboratories have the equipment. The precipitation method using Gamma-Cyclodextrin has become one of alternatives for handling lipemic serum.

Research Objective: To determine the difference and mean in Alanine Aminotransferase (ALT) activity in lipemic serum with and without the addition of the flocculant Gamma-Cyclodextrin 20% with incubation at 23°C.

Research Method: The type of research is a pre-experimental study with One Group Pre-Post Test Design. The research was conducted in March 2025. The samples used were 25 samples with triglyceride levels > 300 mg/dL from hospitals in Yogyakarta. The results were statistically analyzed using Paired Sample T-Test.

Research Results: The average activity of lipemic serum ALT without addition of the flocculant Gamma-Cyclodextrin 20% was 24,04 U/L, whereas the average activity of lipemic serum ALT with addition of the flocculant Gamma-Cyclodextrin 20% was 18,74 U/L. The research results show difference in ALT activity in lipemic serum without and with addition of flocculant Gamma-Cyclodextrin ($p < 0,05$).

Conclusion: There is a difference in activity of serum lipemic ALT without and with the addition of 20% Gamma-Cyclodextrin flocculant with incubation at 23°C.

Keywords: ALT, Gamma-Cyclodextrin, serum lipemic

ABSTRAK

Latar Belakang: Kekeruhan dalam serum lipemik mengganggu banyak pemeriksaan laboratorium dengan metode fotometri. Partikel lipid serum lipemik menyebabkan penyebaran cahaya ke tingkat yang paling tinggi selama pembacaan pada fotometri sehingga menyebabkan hasil tidak akurat. *Gold standart* penanganan serum lipemik adalah ultrasentrifugasi tetapi tidak semua laboratorium memiliki alatnya. Metode presipitasi menggunakan Gamma-Siklodekstrin menjadi salah satu alternatif penanganan serum lipemik.

Tujuan Penelitian: Mengetahui perbedaan dan rerata aktivitas *Alanine Aminotransferase* (ALT) serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin 20% dengan inkubasi 23°C.

Metode Penelitian: Jenis penelitian adalah pra-eksperimen dengan desain penelitian *One Group Pre-Post Test Design*. Penelitian dilaksanakan pada bulan Maret 2025. Sampel yang digunakan sebanyak 25 serum lipemik dengan kadar Trigliserida > 300 mg/dL dari rumah sakit di Yogyakarta. Hasil dianalisis statistik menggunakan *Paired Sample T-Test*.

Hasil Penelitian: Rerata aktivitas ALT serum lipemik tanpa penambahan flokulan Gamma-Siklodekstrin 20% sebesar 24,04 U/L sedangkan rerata aktivitas ALT serum lipemik dengan penambahan flokulan Gamma-Siklodekstrin 20% sebesar 18,74 U/L. Hasil penelitian menunjukkan ada perbedaan aktivitas *Alanine Aminotransferase* (ALT) serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin ($p < 0,05$).

Kesimpulan: Ada perbedaan aktivitas *Alanine Aminotransferase* (ALT) serum lipemik tanpa dan dengan penambahan flokulan Gamma-Siklodekstrin 20% inkubasi 23°C.

Kata Kunci: ALT, Gamma-Siklodekstrin, serum lipemik