

## UJI HOMOGENITAS DAN STABILITAS KADAR ASAM URAT SERUM SAPI YANG DISIMPAN PADA SUHU -20°C

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### ABSTRAK

**Latar Belakang :** Laboratorium klinik menjalankan fungsinya melaksanakan pemeriksaan terhadap cairan tubuh manusia untuk menegakkan diagnosis penyakit. Pelayanan laboratorium dikatakan baik dan bisa mengeluarkan hasil yang bermutu, apabila memperhatikan, menerapkan dan mengembangkan system Quality Control dan Quality Assurance. Pemantapan mutu internal laboratorium dilakukan untuk menjamin kualitas pemeriksaan laboratorium. Salah satu kegiatan pemantapan mutu internal adalah kontrol kualitas yang membutuhkan serum kontrol. Ketersediaan serum kontrol menjadi kendala di laboratorium klinik karena pengadaan serum kontrol komersial di Indonesia masih lama dan harganya mahal. Penggunaan bahan kontrol dari serum hewan seperti sapi dan kuda lebih direkomendasikan oleh WHO karena memiliki komposisi analit mirip dengan specimen dan aman dari penularan penyakit infeksius. Syarat bahan control adalah homogen dan stabil. Parameter kontrol kualitas di laboratorium kimia klinik salah satunya adalah kadar Asam Urat.

**Tujuan Penelitian :** Mengetahui homogenitas dan stabilitas kadar asam urat serum sapi yang disimpan pada suhu -20°C.

**Metode Penelitian :** Penelitian ini menggunakan eksperimen semu dengan desain *Pre and Post Test*. Penelitian menggunakan bahan serum sapi yang didapatkan dari darah sisa penyembelihan sapi. Analisis data menggunakan uji homogenitas dan stabilitas dengan perhitungan yang ditetapkan oleh ISO 13528:2005 yang dikeluarkan oleh International Organization for Standardization yang berpusat di Swiss.

**Hasil Penelitian :** Sampel serum sapi dikatakan homogen jika  $S_s \leq 0,3 \sigma$  dan sampel disebut stabil apabila  $|X_r - Y_r| \leq 0,3 \sigma$ . Data uji homogenitas didapatkan nilai  $0,3 \sigma$  adalah 1,40542, maka sampel dinyatakan homogen karena telah memenuhi kriteria  $S_s \leq 0,3 \sigma$  yaitu  $0,06368 < 1,40542$ . Berdasarkan data uji homogenitas diperoleh  $X_r = 0,350$  dan data uji stabilitas diperoleh  $Y_r = 0,267$ , sehingga  $|X_r - Y_r| = 0,093$ , harga  $0,3 \sigma = 1,40542$ , maka sampel dinyatakan stabil karena memenuhi kriteria  $|X_r - Y_r| \leq 0,3 \sigma$  yaitu  $0,093 < 1,40542$ .

**Kesimpulan :** Serum sapi yang disimpan pada suhu -20°C selama 10 minggu dinyatakan homogen dan stabil terhadap kadar asam urat.

**Kata kunci :** homogenitas, stabilitas, serum sapi, kadar asam urat.

## TEST OF HOMOGENITY AND STABILITY OF URIC ACID LEVELS COW SERUM WAS STORED ON TEMPERATURE -20°C

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### ABSTRACT

**Background:** Clinical laboratories carry out their functions to carry out checks on human body fluids to establish a diagnosis of disease. Laboratory services are said to be good and can produce quality results, if they pay attention to, implement and develop a Quality Control and Quality Assurance system. The internal quality stabilization of the laboratory is carried out to ensure the quality of laboratory examinations. One of the internal quality stabilization activities is quality control that requires a control serum. Availability of control serum is an obstacle in clinical laboratories because the procurement of commercial control serums in Indonesia is still long and expensive. The use of control material from animals serum such as cow and horses is more recommended by WHO because it has an analytic composition similar to specimens and safe from transmission of infectious diseases. The terms of the control material are homogeneous and stable. One of the quality control parameters in the clinical chemistry laboratory is Uric Acid.

**Objective:** To determine the homogeneity and stability of uric acid levels in cow serum stored at -20 ° C.

**Research Method:** This study uses quasi-experimental design with Pre and Post Test. The study used cow serum material which was obtained from the remaining blood of cattle slaughter. Data analysis used a homogeneity and stability test with calculations determined by ISO 13528: 2005 issued by the International Organization for Standardization based in Switzerland.

**Results:** Cow serum samples are said to be homogeneous if  $Ss \leq 3 \cdot 0.3 \cdot \sigma$  and the sample is called stable if  $|Xr - Yr| \leq 0.3 \cdot \sigma$ . Homogeneity test data obtained a value of  $0.3 \cdot \sigma$  is 1.40542, then the sample is declared homogeneous because it meets the criteria  $Ss \leq 3 \cdot 0.3 \cdot \sigma$  which is  $0.06368 < 1.40542$ . Based on homogeneity test data obtained  $Xr = 0.350$  and stability test data obtained  $Yr = 0.267$ , so that  $|Xr - Yr| = 0.093$ , the price of  $0.3 \cdot \sigma = 1.40542$ , then the sample is declared stable because it meets the criteria  $|Xr - Yr| \leq 0.3 \cdot \sigma$  which is  $0.093 < 1.40542$ .

**Conclusion:** Cow serum stored at -20 ° C for 10 weeks was declared homogeneous and stable against uric acid levels.

**Keywords:** homogeneity, stability, cow serum, uric acid level.