

## ABSTRAK

Bahan kontrol penting digunakan untuk mencapai mutu pemeriksaan laboratorium. Bahan kontrol dapat diperoleh dari serum komersial atau dapat dibuat sendiri berupa *pooled sera*. Bahan kontrol yang biasanya digunakan di laboratorium klinik adalah bahan kontrol komersial berupa liofilisat. Namun, bahan kontrol ini harganya cukup mahal, sehingga kurang efisien digunakan di laboratorium yang mempunyai rata-rata jumlah pemeriksaan sedikit. Bahan kontrol liofilisat yang dibuat sendiri dapat digunakan sebagai alternatif dalam mengganti kontrol pabrikan yang cukup mahal. Penelitian ini bertujuan untuk menganalisis stabilitas serum liofilisat buatan sendiri sebagai bahan kontrol terhadap parameter kolesterol dan trigliserida selama 8 minggu. Penelitian ini bersifat eksperimental, dengan rancangan penelitian *time series design*. Teknik pengambilan sampel dilakukan secara *Purposive Sampling*. Penelitian ini dilaksanakan di Laboratorium Kimia Klinik Jurusan Teknologi Laboratorium Medis Poltekkes Kemenkes Surabaya pada bulan Oktober 2021 hingga Mei 2022. Serum darah diproses dengan teknik *freeze dried* untuk mendapatkan bentuk liofilisat. Serum bentuk liofilisat disimpan pada suhu 2-8°C dan dilarutkan menggunakan aquabides setiap minggunya untuk pemeriksaan kadar kolesterol dan trigliserida. Dalam grafik *Levey-Jennings* kadar kolesterol dan trigliserida tidak menyimpang dari 2SD selama masa penyimpanan. Uji regresi menunjukkan bahwa lama penyimpanan berpengaruh sebesar 0,4% terhadap kadar kolesterol dan berpengaruh 55% terhadap kadar trigliserida. Hasil dari penelitian dapat disimpulkan bahwa serum liofilisat buatan sendiri stabil selama 8 minggu penyimpanan.

**Kata Kunci:** Pemantapan Mutu Intenal (PMI), Serum Liofilisat Buatan Sendiri, Kadar kolesterol, Kadar trigliserida

## ABSTRACT

Important control materials are used to achieve the quality of laboratory examinations. Control materials can be obtained from commercial serum or can be made yourself in the form of pooled sera. The control material that is usually used in clinical laboratories is a commercial control material in the form of lyophilisate. However, this control material is sometimes made from bovine serum which may not be the same as human serum, besides that the price is also very expensive, making it less efficient to use for laboratories that have a small average number of examinations. The self-made lyophilized control material can be used as an alternative to replace the manufacturer's control which is quite expensive. This study aimed to analyze the stability of homemade serum lyophilisate as a control material for cholesterol and triglyceride parameters for 8 weeks. This research is experimental, with a time series design. The sampling technique was carried out by purposive sampling. This research was carried out at the Clinical Chemistry Laboratory, Department of Medical Laboratory Technology, Health Polytechnic Ministry of Health Surabaya from October 2021 to May 2022. Blood serum is processed by freeze dried technique to obtain a lyophilized form. Serum lyophilized form is stored at 2-8°C and dissolved with aquabides every week for cholesterol and triglyceride levels. In the Levey-Jennings chart cholesterol and triglyceride levels did not deviate from 2SD during storage. Regression test showed that storage time had an effect of 0,4% on cholesterol levels and 55% on triglyceride levels. The results of the study concluded that the homemade serum lyophilisate was stable for 8 weeks of storage.

**Keywords:** Internal Quality Assurance (IQA), Homemade Lyophilized Serum, Cholesterol levels, Triglyceride levels