

Thesis Title                      Preparation of Bovine Serum for Quality  
Control in Clinical Chemistry

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#### ABSTRACT

This research is to study the preparation of quality control serum used in clinical chemistry. Bovine serum is used as the matrix for this preparation because it is easy to get from an abattoir and be prepared in a large volume. Bovine blood was allowed to clot in room temperature and the serum was removed by centrifugation within the average time of six hours after collection. The mean yield of serum was about 221 mL/L bovine blood. The serum components were analysed in 10 cattle. The average LD was 2,420 U/L. Unappropriate value of LD enzyme to be used as a control material which was reduced by heat treatment technic at 65° C. for 30 minutes. As such, the LD level was decreased from 2,000 U/L

to 600 U/L. which is suitable for the preparation of quality control serum. However, the activity of various enzymes; ALT, ALP, CK and AMS; was lost by this treatment. It, therefore, was necessary to raise the enzyme level by addition of a concentrated enzyme. The partially purified enzymes have been prepared from various tissues and organs of human and animal i.e., human placenta; pig, chicken or bovine heart; chicken, pork or beef flesh. The ALP and CK enzyme level was increased by addition of crude and partially purified enzymes which were extracted from human placenta and pig heart respectively. Moreover, other blood chemistry levels were adjusted by addition of soluble chemical reagents. The control serum in this study was prepared in 2 levels, normal and abnormal. However, further study in a large increase in triglyride level of the control serum should be performed.