Evaluation of Serum Lactate Dehydrogenase Activity in a Virtual Environment

Trindade, V.M.T.; Arantes, P.A.; Zanatta, G.; Zimmer, E.R.; Ewald, L.; Pettenuzzo, L.F.;
Matté, C.; Salbego, C.G.

Departamento de Bioquímica, Instituto de Ciências Básicas da Saúde,
Universidade Federal do Rio grande do Sul, Porto Alegre, RS, Brasil.

Introduction: Lactate dehydrogenase is a cytosolic enzyme involved in reversible transformation of pyruvate to lactate. It participates in anaerobic glycolysis of skeletal muscle and red blood cells, in liver gluconeogenesis and in aerobic metabolism of heart muscle. The determination of its activity helps in the diagnosis of various diseases, because it is increased in serum of patients suffering from myocardial infarction, acute hepatitis, muscular dystrophy and cancer. This paper presents a learning object, mediated by computer, which contains the simulation of the laboratory determination serum lactate dehydrogenase activity measured by the spectrophotometric method, based in the decrease of absorbance at 340 nm.

Materials and Methods: Initially, pictures and videos were obtained recording the procedure of the methodology. The most representative images were selected, edited and inserted into an animation developed with the aid of the tool Adobe® Flash® CS3. The validation of the object was performed by the students of Biochemistry I (Pharmacy-UFRGS) from the second semester of 2009 and both of 2010. **Results and Discussion:** The analysis of students' answers revealed that 80% attributed the excellence of the navigation program, the display format and to aid in learning. **Conclusion:** Therefore, this software can be considered an adequate teaching resource as well as an innovative support in the construction of theoretical and practical knowledge of Biochemistry. Available at: <http://www6.ufrgs.br/gcoeb/LDH>

Keywords: learning object, lactate dehydrogenase, serum enzyme
Support: SEAD-UFRGS