Biochemical Hypermedia: Glucose as a Central Molecule in Metabolism
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The technologies of information, together with education resources, have been pointed out as a solution to the improvement of teaching approach, but they still claim for programs to fulfill the demands of didactic materials. So, a biochemical software was developed aiming to contribute for the better understanding of the glycolysis. It was prepared with the help of concept maps, ISIS Draw, ADOBE Photoshop and FLASH MX Program. The introduction screen shows a teacher in a theater presenting glucose as a central molecule in the metabolism of animals, plants and many microorganisms. She invites for a better knowledge of glucose through a view of its discovery and its metabolism. A step by step animation process shows the interaction of glucose in aerobic conditions with the enzymes of the glycolytic pathways and its products. An explanation text of each enzyme catalytic process is provided by links. A static pathway is always available through a link. The fates of pyruvate yielding lactic acid and ethanol under anaerobic conditions are shown as well. The overall reactions of gluconeogenesis and the functional significance of this pathway are presented. The experimental treatment involved the presentation of this hypermedia for Nutrition undergraduate students (UFSC) as a tool for better comprehension of the theme. The students revealed that it was extremely effective in promoting the understanding of the enzymatic mechanisms involved in glycolysis. This suggests that there is a significant added value in employing the software as an instructional effort to enhance student’s abilities to understand biochemical pathways.

Keywords: glucose, glycolytic pathways, biochemical hypermedia.