Simulations on the Teaching of Molecular Biology: Experience's Report

Silva, A.L.S.; López, A.M.Q.

¹Institute of Chemistry and Biotechnology, IQB, UFAL, AL, Brazil

INTRODUCTION: The comprehension of techniques used in Molecular Biology neither always is easy. Therefore, the objective of this work was to apply simulations in Molecular Biology for graduating students of a Pharmacy course from a private educational institution, to allow them to practice the apparent difficult protocols. **MATERIALS AND METHODS:** Three groups of students (50 each) were evaluated. Two of them were submitted to different simulatory activities, such as: a) visiting the virtual laboratory of Utah University (USA) to understand gel electrophoresis and polymerase chain reaction (PCR) techniques, b) extracting DNA from oral mucosa by means of a homemade protocol, c) investigating simulatory paternity tests, d) proposing their own microarrays by painting them on paper and then interpreted the results according to the colors, e) designing primers (small fragments of DNA to PCR) with the free software Primer3 and testing them *in silico* PCR. The third group of students was only submitted to oral theoretical classes about all these themes. The progress of the understanding was qualitatively evaluated and compared by the analysis of questionnaires. **RESULTS AND DISCUSSION:** The groups submitted to the virtual classes were responsive during the development of activities and had a better performance in the examinations than the group that had only theoretical classes, showing better comprehension about the themes. Their greatest difficulty was the limitation in the English language to interact with the websites (they often asked about an alternative site in Portuguese). **CONCLUSION:** The didactical sequence involving exercises in websites by using freeware and recreational activities in classroom with graduating students of Pharmacy proved to be an effective tool in the learning of some of the techniques in Molecular Biology, mainly when a lab and some equipment are not available to perform practical activities.

Keywords: Molecular Biology; Simulation; Teaching Strategy.