DNA Fingerprint: a Lab Protocol for High School Students

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INTRODUCTION. The amount of new discoveries in molecular biology as well as the speed with which technological advances have been occurring and presented to students increases the complexity, the dynamics and the fluidity of the school environment. However, the approaching methods and the teaching resources used in classroom remains the most traditional ever. Therefore, the development of alternative methodologies which can overcome the deficiencies in schooling-learning process and motivate students for science field is needed. **OBJECTIVE.** Thus, we aimed to standardize a laboratorial protocol for simulate DNA fingerprint technique directed for high school students. **MATERIAL AND METHODS.** Once the original protocol with DNA samples requires expensive reagents and equipment, practical activities were performed with protein samples. Protein extraction protocols used for seven distinct samples were tested: food supplements; milk serum; blood serum; powdered milk; animal; plant; rice bran. Each protocol efficacy was tested in SDS-PAGE electrophoresis. **RESULTS AND DISCUSSION.** Best samples were chosen for simulate the band patterns in an electrophoresis gel ordinarily found in DNA fingerprint methods. **CONCLUSIONS.** Therefore, such results may be used for forensic and paternity tests simulations in an alternative teaching activity for high school students, which could arise the opportunity to approach the basics principles of science technology and research. However, more tests are required in order to reproduce the results with cheaper protocols and make its viability in the class. Nonetheless, results accomplished in this work may be reproduced by school teachers in a partnership with academy labs in order to bring biotechnology resources to students life.

Keywords: Lab practice; Protein electrophoresis; DNA fingerprint