A comparative study of fish species identification by gel isoelectrofocusing, two-dimensional gel electrophoresis, and capillary zone electrophoresis

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A comparative study of fish species identification was accomplished using three different electrophoretic techniques. Sarcoplasmic proteins were extracted from three related fish species and subjected to gel isoelectrofocusing (IEF), two-dimensional polyacrylamide gel electrophoresis (2D-PAGE), and capillary zone electrophoresis (CZE). The fish species-Genypterus chilensis, Genypterus blacodes, and Genypterus maculatus-were from the Ophidiidae family. The three electrophoretic techniques provided suitable fish species identification. Nevertheless, CZE demonstrated several advantages over the other two conventional techniques. Some of the benefits include the use of small amounts of reagents; short separation times, permitting fast comparative analysis; data reproducibility; and ease with which the technique is performed.