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## Comparison of DNA extraction methods from fresh and processed tuna muscle tissue

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Authentication of tuna fish products is necessary to assure consumers of accurate labeling of food products. The most common methods that can be used to identify tuna species include methods based on detection of specific DNA (PCR and its modification: real-time PCR, digital PCR etc.). The quality of species specific DNA crucially affects the efficiency of amplification during the subsequent PCR. The question in DNA detection in processed products lies in the possibility of the DNA fragmentation during the processing technologies and the use of ingredients that may inhibit the PCR reaction. In this study, three DNA extraction methods were compared: DNeasy Blood and Tissue Kit, DNeasy mericon Food Kit and Chemagic DNA Tissue 10 Kit. The quantity and quality of DNA were estimated by measuring DNA concentration and ratios A260/A280. The amplifiability was tested by using a set of primers designed to detect the fragments of COI gene of different sizes ranges from 100 bp to 500 bp. Several parameters were evaluated: The effect of heat treatment (boiling at 70°C and 90°C), cold and hot smoking, sterilization procedure of whole and mechanically treated muscle used in canned process (high temperature in combination with high pressure), and pate and spread.

### Biography

Pospisilova Eliska is pursuing her PhD at the Faculty of Veterinary Hygiene and Ecology at the Veterinary and Pharmaceutical University in Brno (VFU). She is a student of Hygiene and Technology of Food. She is working at the Research Institute of Veterinary Medicine, Brno in Department of Food and Feed Safety to prove food adulteration.

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