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OPTIMIZATION OF ANALYTICAL METHOD FOR PERFLUORINATED COMPOUNDS IN FRESH AND CANNED FISH

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PFCs belong to one of the most important group of "emerging" contaminants. To assess health risks associated with dietary intake, in 2008, EFSA (European Food Safety Authority) recommended to member states to monitor two major representatives of this group – PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) in food stuff. These two chemicals are usually used as indicator substances for potential occurrence of other PFCs. Due to their properties such as persistency, mobility in the environment and bioaccumulation, PFCs have been found in animals and human tissues. Since marine and freshwater fish intake is a major source of humans' exposure, it is necessary to monitor levels of PFCs in these biota samples as well as in other fish products.

In presented study, interlaboratory comparison of two analytical procedures was carried out. Altogether 40 fish and fish product samples (tuna, herring, salmon, cod, and sardines) collected in the Czech and Norwegian markets were examined for a wide range of perfluorinated carboxylic acids, sulfonates, sulphonamides and telomers alcohols. Both of the extraction procedures were based on using organic extraction solvent (*i*) methanol (*ii*) acetonitrile and dispersive solid phase clean-up step (*i*) activated charcoal and (*ii*) ENVIcarb. Samples were separated by a high performance liquid chromatography (HPLC) using an analytical column (*i*) Atlantis T3 (100mm $\times$ 2.1 mm; 3 µm) (Waters, USA) (*ii*) ACE 3 RP C18 (150 mm $\times$ 2.1 mm; 3 µm) (ACE, UK).

The identification/detection of target analytes was performed employing (*i*) Quattro Premier XE (Waters) tandem quadrupole mass spectrometer operated in MRM mode and (*ii*) Q-Tof Micro (Waters) in MS mode.

Keywords: PFC, fish products, extraction