平成 22 年度　学会誌等論文発表

演　題　名	氏　名	雑　誌　名	巻(号)・頁・年(西暦)	抄録 No.
リアルタイム PCR 法によるスケトウダラ卵加工品中のマダラ卵およびカラフトシシャモ卵の検出	鶴田　小百合 坂本　智徳 赤木　浩一 樋脇　弘	日本食品衛生学雑誌	51(3)，110～114，2010	1
固相抽出 -エキシマー蛍光誘導体化 HPLC 法による食品中不揮発性アミン類の分析	坂本　智徳 赤木　浩一 樋脇　弘	日本食品衛生学雑誌	51(3)，115～121，2010	2

学会誌等論文発表抄録

1．リアリアルタイム PCR 法によるスケトウダラ卵加工品中のマダラ卵およびカラフトシシャモ卵の検出

保健科学課　鶴田　小百合・坂本　智徳
赤木　浩一・樋脇　弘

日本食品衛生学雑誌

A rapid and sensitive TaqMan real-time PCR assay for the detection of Pacific cod (Gadus macrocephalus) and capelin (Mallotus villosus) roes in Alaska pollack (Theragra chalcogramma) roe product was developed. The primers and the TaqMan MGB (minor groove binder) probes were designed based on the gene encoding cytochrome b for the specific detection of Alaska pollack, Pacific cod and capelin. This real-time PCR assay had the detection limit of 0.002 ng/μL mitochondrial DNA and showed no cross-reaction with 48 other species. The calculated r^2 values of the standard curves for the three species were 1.000. This assay was applied for the detection of Pacific cod and capelin roes in mixture samples: Pacific cod or capelin roes were added to Alaska pollack roes at 0.1, 1 and 10%. The threshold cycle values were obtained from both of the mixture samples at 0.1%. Practical applicability of this assay was examined with 64 samples of Alaska pollack roe products. In all cases, the species detected from the samples corresponded with species described on the food label.

2．固相抽出 -エキシマー蛍光誘導体化 HPLC 法による食品中不揮発性アミン類の分析

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A method for the determination of nonvolatile amines (putrescine, cadaverine, histamine, tyramine and spermidine) in foods by solid-phase extraction and excimer-forming derivatization was investigated. Nonvolatile amines in a solid sample were extracted with 3% trichloroacetic acid, and the amines in a liquid sample were extracted with water. The extract was applied to polymer-based strong cation exchange mini-column, which was then rinsed with phosphate buffer of pH 6.8 and water. Nonvolatile amines were eluted with 100 mmol/L potassium carbonate solution. The solution was mixed with 6 mmol/L 1-pyrenebutylyl chloride solution and derivatized. Derivatives of nonvolatile amines were analyzed by LC-FLD, and the identity of the amines was confirmed by LC-MS/MS without derivatization. The limit of detection (S/N≧3) of nonvolatile amines in all samples was 0.04 μg/g, and the limit of quantitation (S/N≧10) was 0.1 μg/g. Recoveries of nonvolatile amines from fish tissues, miso, shoyu and red wine were in the range of 80.4-111%.