

## DETERMINATION OF *TRANS*- AND *CIS*- UROCANIC ACID IN FISH PRODUCTS

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*Cis*-urocanic acid (*cis*-UCA), the photoisomer of *trans*-UCA which is a major UV absorbing component in stratum corneum, is the triggering agent in UV-B induced immunosuppression. It stimulates the release of neuropeptides which in turn cause the release of endogenous histamine and tumour necrosis factor- $\alpha$  in mast cells. In compromised individuals, these compounds play important roles in the progression and spread of cutaneous malignancies. The release of histamine also elicits an immediate-type allergic reaction. *Trans*-UCA is formed via deamination of histidine, the same amino acid involved in the formation of histamine. The prevalence of *trans*- and *cis*-UCA in food is largely unknown, and hence, this study reports on a method to extract, clean up and perform simultaneous ion-pair HPLC analysis of the two isomers in fish samples. The method was found to be a rapid, precise and sensitive with a short retention time for simultaneous separation of UCA isomers. Results on analysis of processed fish samples revealed that *trans*- and *cis*-UCA were present in all samples with an average contents of 14.18 and 11.04 mg/kg, respectively. The maximum levels detected were 118.0 mg/kg of *trans*-UCA and 68.4 mg/kg of *cis*-UCA. A fermented fish product was found to contain more *cis*-UCA than *trans*-UCA. Biogenic amines were also quantified and histamine content was mainly lower than 50 mg/kg. Cadaverine was the most abundant biogenic amine while tryptamine was the least abundant. While maximum levels for histamine in foods have been established by various authorities, none is available for *trans*- and *cis*-UCA.

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