

## **Determination of histamine in commercially processed fish in Sri Lanka**

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### **Abstract**

A High Performance Liquid Chromatographic (HPLC) method for the determination of Histamine in fish was validated. Histamine was detected by fluorescence at an emission wavelength of 450 nm and an excitation wavelength of 350 nm after reaction with o-phthalaldehyde and a calibration graph was constructed in the range of 1 mg/kg to 5 mg/kg. Linear correlation coefficient (r) of 0.998 and regression coefficient ( $R^2$ ) of 0.997 was obtained for the calibration graph. Recovery of the method was 96% and the limit of determination was 1 mg/kg.

Accuracy of the method was further established by analysing a reference test material from FAPAS, UK (T-2702), which has an assigned average histamine value of 102 mg/kg with a range of 86 – 118 mg/kg. Histamine content of the same sample was determined with validated method and was  $103 \pm 6$  mg/kg (n=35).

Validated method was used to determine the histamine content of commercially processed Tuna fish in Sri Lanka. Histamine content of different types of fish and Maldives fish were also determined.

Results indicated that the export consignment of Tuna fish in Sri Lanka has histamine levels of  $19 \pm 11$  (n = 71), which is well below the maximum allowed level by EU of 200 mg/kg. Different types of fish show different levels of histamine content and lowest value of  $2 \pm 1$  mg/kg (n = 2) was reported for Sword fish samples. Level of histamine in Maldives fish was  $22 \pm 10$  (n = 9) and is well below the permissible levels.

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