In the present article we report our results on the development of a selective automated method for the determination of histamine in seafood using the concept of zone fluidics. Histamine (HIM) is a chemical compound that forms post-mortem in the muscle of certain fish, such as tuna, by the action of bacteria [1]. The method is based on the on-line reaction of the analyte with o-phthalaldehyde in the absence of a nucleophilic reagent [2].

The careful selection of the chemical and instrumental variables such as the reaction time and the amount concentration of OPA enabled the determination of the analyte with adequate sensitivity at the low micromolar level and with specificity against other biogenic amines and amino acids. It is characteristic that the selectivity factor for histidine is 700.

The LOD was 0.05 μmol L⁻¹ and linearity was obeyed in the range of 0.5 – 15 μmol L⁻¹. The proposed method offers a reasonable sampling rate of 15 h⁻¹ and adequate accuracy and precision for the analysis of seafood products after minimum sample preparation.

KEYWORDS: zone fluidics; histamine; o-phthalaldehyde; seafood; determination

Figure 1. Representative peaks for the determination of Histamine by the proposed ZF method (c = 10 μmol L⁻¹).

REFERENCES