ON-LINA SEPERATION, BATCH AND FLOW INJECTION SPECTROPHOTOMETRIC DETERMINATION OF HISTAMINE IN FISH MEAT PRODUCTS USING p-NITROANILINE

Nabil A. FAHRE, Mohammad S. ABDULLAH

Department of Chemistry, College of Science Education, Univ. of Salahalddin, Erbil, Iraq

havrasl@yahoo.com

Fl system was used for the determination of histamine. A mini–column (3.5 cm length and 2.5 mm i.d.) filled with amberlite resin (weak cation exchanger) was introduced to the flow system. Two peristaltic pumps were used in the system. The first one was used to propel 0.1% of p-nitroaniline (prepared in 0.25M H₂SO₄), 0.5% sodium nitrite and 1.5M potassium hydroxide solutions with flow rates 0.8, 0.7 and 0.8 ml/min respectively. The second one was used to propel either buffer solution or 0.2M hydrochloric acid solution with flow rate 0.7 ml/min. A selection valve was introduced to the flow system for changing the pumped solution between hydrochloric acid and buffer solutions. A 200 µl of the sample was injected into the carrier stream through the injection valve. Three reaction coils were used in the system with lengths 40-cm (RC₁), 20-cm (RC₂) and 30-cm (RC₃). The merged streams were passed through a quartz flow cell in a spectrophotometer connected to recorder. Under the optimum conditions, the calibration curve was linear in the range 2.0 – 30.0 µg/ml of histamine using the peak height as an analytical signal, while the detection limit was 1.0 µg/ml. The precision and accuracy of the method were studied depending upon the values of the relative standard deviation and relative error percentage. The selectivity of the method was investigated by studying the effect of interference from other species accompanied with histamine in fish meal.

The proposed method was applied for the determination of histamine in fish meal. The results were compared with the standard method and a good agreement between the results was obtained.