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High-Performance Liquid Chromatographic Determination of Oxytetracycline Residue in Cured Meat Products

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Abstract: The development of a sensitive automated method for residue control of oxytetracycline (OTC) in cured meat (soudjouk) is described. The principle steps involve the extraction of OTC from cured meat in the presence of citric acid with nitric acid, methanol and de-ionized water, and then the determination by HPLC. In HPLC, Hypersil BDC C18 column was used and OTC was separated at 24 °C using a mobile phase of H₂O (pH=2.10 with H₂SO₄): ACN (85:15, v/v) at a flow rate of 1.5 ml/min. A variable wavelength detector was set at 360 nm. The detection limit of the method was calculated at 8 ng/g and the minimum detectable quantity was found as to be 40 mg/ml. The statistical evaluation demonstrated high absolute recoveries of from 78 to 100% for OTC. The method was also used with 10 different cured meat samples marketed in Turkey, and in 7 of them the OTC residue was found to be higher than the tolerance levels accepted by the EU, FDA and Turkish Ministry of Agriculture.

Key Words: Oxytetracycline, HPLC, soudjouk, cured meat

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