

DEVELOPMENT AND VALIDATION OF METHOD FOR THE DETERMINATION OF QCA AND MQCA IN PORCINE MUSCLE WITH LC-MS/MS.

Georgia Nafti ^a, Spyroula Constantinou ^b, Christoforos Papachrysostomou ^b, Popi Kanari ^b, Militsa Hadjigeorgiou ^b.

^a School of Applied Sciences, Department of Chemical & Biological Sciences
University of Huddersfield

^b Veterinary Drug Residues Laboratory, State General Laboratory, Cyprus

Abstract

Carbadox and Olaquinox are used as medicinal feed additives and as growth promoters in young pigs but they have been banned since 1999 due to their mutagenic and carcinogenic effects. Their monitoring in foods of animal origin is requested based on 96/23EC. A sensitive method has been developed and validated for the quantitative simultaneous determination of carbadox residues as quinoxaline-2-carboxylic acid (QCA) and olaquinox as methylquinoxaline-2-carboxylic acid (MQCA) in porcine muscle using LC-MS/MS. The method involved cleaning of porcine tissues with back extraction solution followed by solid phase extraction with cation exchange cartridges. Validation of the method covered the concentration range of 5-20 µg/kg. The analytical limits were determined for QCA (CC_α=0.537µg/Kg, CC_β=0.797µg/Kg) and for MQCA (CC_α=0.407µg/Kg, CC_β=0.609µg/Kg) thus proving method's performance and efficiency for the successive determination of the two metabolites in porcine muscle.