Determination of Ochratoxin A in cereals by LC-MS/MS with QuEChERS extraction

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Ochratoxin A (OTA) is toxin produced by *Aspergillus* and *Penicillium* fungi. OTA was detected in contaminated food and cereal grain. The LC-MS/MS was developed and validated for determination of Ochratoxin A in cereals with QuEChERS extraction, which was employed using 5% (v/v) formic acid in ethyl acetate for solvent extraction. The extract solution was cleanup by dispersive solid phase extraction (dSPE) combination with primary secondary amine (PSA) and C18. The calibration curve was linear in the range of 0.001–0.050 mg kg^{-1} with a correlation coefficient (r^2) of 0.9996. The limit of detection (LOD) and the limit of quantification (LOQ) were 0.0001 mg kg^{-1} and 0.0003 mg kg^{-1}, respectively. The percentage recovery ranged from 95.97 to 98.26, with within-day measurements at three concentration levels 0.001, 0.005 and 0.05 mg kg^{-1} showing the percent relative standard deviation (%RSD) values less than 7.88 (n = 10). Ohratoxin A in cereal samples were found to be 2.79×10^{-4} to 7.09×10^{-4} mg kg^{-1}. This method is a simple, rapid and sensitive for determination of Ochratoxin A in cereal samples.

Keywords: QuEChERS; Cereals; Ochratoxin A