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Validation and monitoring of ochratoxinA in different presentations of Colombian coffee

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Colombia is the 4th worldwide producer of coffee and this commodity is the most important in the country, however there is a need to ensure its safety. The present study proposes a validated method for the quick analysis of Ochratoxin A in coffee using solid-liquid extraction, immunoaffinity column clean-up and UPLC-MS/MS analysis. Sample preparation was mainly taken from R-BiopharmOchraprep® application note and modified as needed: 5 g of coffee (grounded and homogenized) were extracted with 25 ml of 1% (w/v) NaHCO3 in deionized water (pH: 7.4). The extract was filtrated, prepared and eluted in an immunoaffinity column. Binding of OTA in the column was eliminated using 1.5 mL of 2% (v/v) of acetic acid in MeOH and 1.5 mL of deionized water. Final extract was analyzed in a UPLC-MS/MS instrument using MRM mode. Different presentations of coffee were validated (soluble and roasted) including specificity (transitions ratio), linearity (residuals ≤20%), bias (%RSD ≤ 20%), trueness (%R 70-120%), LOQ and uncertainty assessment (≤50%) in a range from 2 to 20 µg/kg. A monitoring in different samples of several brands available in local stores was carried out to assess a possible risk of contamination and test the performance of the method for real samples, using quality controls to monitor compliance of identity, trueness and precision.

Biography

Andrés Ramírez Restrepo is a Colombian chemist. He received several awards for academic excellence at his undergraduate studies (from Universidad Industrial de Santander) which he focused on the fragrance of tuberose flowers from Antioquia. His magister studies included accreditation of analytical methods to monitor pesticide residues in different local commodities. Since 2011 he is subscribed as researcher of contamination at trace levels of environmental compartments in the research group Grupo Diagnóstico y Control de la Contaminación of the Universidad de Antioquia.

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