

Determination of Heterocyclic Aromatic Amines in Meat Products by UHPLC-MS/MS

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ABSTRACT

Heterocyclic Aromatic Amines (HAAs) are present in cooked meats and are formed via Maillard reaction having as precursors creatine, creatinine, amino acids and sugars. Almost all HAAs were proven to be carcinogens in toxicology studies and therefore determination of HAAs in meat products are important to evaluate human exposure. An UHPLC-MS/MS was optimized and validated to quantify simultaneously IQ, IQx, MeIQ, MeIQx, 4,8 DiMeIQx and PhIP. Samples were finely ground, extracted with HCl 0,1 mol/L, purified by Strata XC cartridges and injected on chromatography system. LOD and LOQ ranged from 0.02 to 0.05 and 0.06 to 0.18 ng/g, respectively. Good coefficients of correlation ($r > 0.99$) were obtained for the analytical curves for all HAAs. Recovery was estimated by fortified samples prepared in six replicates at three concentrations levels and values ranged from 76 to 107 %. Precision (n=6) varied from 4.2 to 9.3 %.

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