# DETERMINATION OF NITROSAMINES IN FOOD USING LC-MS/MS

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Nitrosamines are formed as food is heated through the reaction of amines with nitrites, which are generally used as a preservative [1]. Nitrosamines are known as carcinogens and these compounds potentially appear in cured meat, dairy products particularly in cheese, beer and fishery products. Nitrosamines have shown the potential of being carcinogenic to some animal species and are likely to be related to human cancer [2]. Therefore, there is an increasing interest in determination nitrosamine compounds in food by several analytical techniques. In this study, an analytical method was developed based on liquid chromatography coupled with triple quadrupole mass spectrometry to determine the analytes in different food groups, which are fish, meat, cheese and beer. In the extraction stage, the quechers method was modified [1,2]. Five nitrosamines compounds (N-nitroso piperidine, N-nitroso diphenylamine, N-nitroso di-N-prpylamine, N-nitroso di-N-buthylamine and N-nitroso pyrolidine), which are mainly formed in food products were determined in four different food groups. The limits of quantification for all nitrosamine compounds in all matrixes groups were determined as 0.1 mg/kg. Recovery values were between 84.9% and 102.8%.

**[1]** Lehotay, S. J., Sapoahnikova, Y., Han, L., Johston, J. J., 2015, Analysis of Nitrosamines in Cooked Bacon by QuEChERS Sample Preparation and Gas Chromatography–Tandem Mass Spectrometry with Backflushing, Journal of Agriculture and Food Chemistry, 63 (47), 10341-10351.

**[2]** Ripollés, C., Pitarch, E., Sancho, J. V.,. López, F. J., Hernández F., 2011, Determination of eight nitrosamines in water at the $ngL^{-1}$ levels by liquid chromatography coupled to atmospheric pressure chemical ionization tandem mass spectrometry, Analytica Chimica Acta, 702, 62-71.