

Screening of risk substances in infant formula using High-Resolution Mass Spectrometry

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Abstract

A highly sensitive and effective method for screening risk substances in infant formula has been developed using Full Scan/ddms^2 and Full Scan/AIF using High-Resolution Mass Spectrometry UPLC Q-Orbitrap . The pretreatment was carried out using modified QuECHERS with acetonitrile and ultrapure water as solvent and PSA , C18 as purification reagent. Orthogonal design was introduced to optimize pretreatment condition to acquire satisfying result. In the screening procedure , firstly , ms database was built using Full Scan/ddms^2 , and secondly, Full Scan/AIF was adopted to screening risk substance in infant formula, and the risk substance was divided in target and non-target to make the screening in detailed. Accurate m/z, Isotope peaks, Retention time, Fragments was key parameter for target screening and confirmation in Trace-Finder. To validate effectiveness of the method ,infant formula added with 109 kinds of pesticides and 16 kinds of sulfonamides was analyzed, result showed the screening method can simultaneously detect a various kinds of risk substances. It reduces the workload of routine detection and provides a big data support for the safety of milk powder.

Biography

Dr. Wang has completed his PhD in Biomedical engineering by Tianjin University and postdoctoral. He has worked as associate researcher of food safety and quality at Chinese Academy of Inspection and Quarantine.He is an expert in HPLC, HPLC-MS/MS, GC, GC-MS/MS, QE .He has published more than five papers in reputed journals and has rewarded Provincial science and technology award which named “Application of on-site rapid detection technology in food (exporting to Russia) pollutants such as forbidden veterinary drugs”. His career goal was “As many medicine is the same origin with food, so we can grasp the mystery of food to avoid diseases and improve public health”.

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