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Determination of L-Carnitine in milk and dairy products by hydrophilic liquid chromatography tandem mass spectrometry

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An analytical method was developed for the determination of L-Carnitine in milk and dairy products using Hydrophilic Interaction Chromatography Tandem Mass Spectrometry (HILIC-MS/MS). The samples were extracted with 2% acetic acid solution, and the protein was precipitated with acetonitrile subsequently. The separation of L-Carnitine was carried out on an Acquity UPLC BEH HILIC column using ammonium acetate-acetonitrile as mobile phase. The quantitation analysis of target compound was performed under the Multiple Reaction Monitoring (MRM) mode by the external standard method. A good linear relationship was obtained between peak area and concentration of L-Carnitine in the range of 1-100ng/mL, with correlation coefficients more than 0.99 and Limit Of Quantitation (LOQ) of 0.01 mg/Kg. LOQs of L-Carnitine was 0.01 mg/Kg. The spiked recoveries were 96.0%-103.4%. The precision RSD was below 4.3%. The sample preparation was simple and rapid, the results were precise and sensitive. The developed method was suitable for the study of concentration of L-Carnitine in milk and dairy product and provided the technical support for the infant formula.

Biography

Yanming Liu has completed her PhD from Dalian Institute of Chemical Physics of Chinese Academy of Sciences. She was engaged in food safety inspection and research work for nearly ten years and more than 20 papers have been published.

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