Analysis of vitamin K-1 in fruits and vegetables using accelerated solvent extraction and liquid chromatography tandem mass spectrometry with atmospheric pressure chemical ionization

The objective of this study was to develop a rapid, sensitive, and specific analytical method to study vitamin K-1 in fruits and vegetables. Accelerated solvent extraction and solid phase extraction was used for sample preparation. Quantification was done by liquid chromatography tandem mass spectrometry with atmospheric pressure chemical ionization in selected reaction monitoring mode with deuterium-labeled vitamin K1 as an internal standard. The precision was estimated as the pooled estimate of three replicates performed on three different days for spinach, peas, apples, banana, and beetroot. The repeatability was 5.2% and the internal reproducibility was 6.2%. Recovery was in the range 90-120%. No significant difference was observed between the results obtained by the present method and by a method using the same principle as the CEN-standard i.e. liquid-liquid extraction and post-column zinc reduction with fluorescence detection. Limit of quantification was estimated to 0.05 μg/100 g fresh weight. (C) 2015 Elsevier Ltd. All rights reserved.

General information
State: Published
Organisations: National Food Institute, Division of Food Chemistry, Research Group for Bioactives – Analysis and Application
Authors: Jäpelt, R. B. (Intern), Jakobsen, J. (Intern)
Number of pages: 7
Pages: 402-408
Publication date: 2016
Main Research Area: Technical/natural sciences

Publication information
Journal: Food Chemistry
Volume: 192
ISSN (Print): 0308-8146
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 5.19 SJR 1.793 SNIP 2.109
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.85 SJR 1.731 SNIP 2.095
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.582 SNIP 1.946 CiteScore 4.31
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.557 SNIP 2.01 CiteScore 3.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.554 SNIP 2.056 CiteScore 3.87
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.762 SNIP 2.342 CiteScore 3.98
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.911 SNIP 2.383 CiteScore 4.17
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.981 SNIP 2.253