

Determination of tobacco-specific nitrosamines in replacement liquids of electronic cigarettes by liquid chromatography-tandem mass spectrometry

Journal Article ¹⁾

Highlights

- The new analysis method of TSNAs in replacement liquids by LC-MS/MS.
- First article for the identification and quantification of TSNAs in replacement liquids.
- The TSNA analytical data in 105 replacement liquids of E-cigarettes.

Abstract

A liquid chromatography-tandem mass spectrometric method was described to detect tobacco-specific nitrosamines (TSNAs) in replacement liquids of electronic cigarettes. Solid-phase extraction (SPE) and liquid-liquid extraction (LLE) were compared to each other to select the optimum clean-up method. Under the established condition, the limits of quantification of N'-nitrosonornicotine (NNN), 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK), N'-nitrosoanabasine (NAB), and N'-nitrosoanatabine (NAT) were 0.06, 0.07, 0.06, and 0.04 µg/L respectively, by using 0.5 mL of replacement liquids, respectively, and the relative standard deviation was less than 10% at concentrations of 5.0 and 25.0 µg/L. The concentrations of TSNAs were measured in concentration ranges of 0.34-60.08 µg/L (64.8% detection frequency) for NNN, 0.22-9.84 µg/L (88.6% detection frequency) for NNK, 0.11-11.11 µg/L (54.3% detection frequency) for NNB, and 0.09-62.19 µg/L (75.2% detection frequency) for NAT in 105 replacement liquid brands from 11 electronic cigarette companies purchased in the Korean market.



Related: [New Study Confirms That E-Cigarettes Have Minimal Quantities of Nitrosamines - Authors Do Not Report It as a Conclusion](#)

z-ref: wjnw8k5c

[Carcinogens](#), [Category-Health and Safety](#), [Chromatography](#), [Gas](#), [E-Cigarette](#), [e-liquid](#), [Folder-E-Cigs](#), [Leans-Positive](#), [Nitrosamines](#), [RESEARCH](#), [Study](#), [toxicity](#), [TSNAs](#), [Vapor](#)

¹⁾

Kim & Shin (2013), Determination of tobacco-specific nitrosamines in replacement liquids of electronic cigarettes by liquid chromatography-tandem mass spectrometry, <http://www.sciencedirect.com/science/article/pii/S0021967313005001#fig0010> accessed: 2013-08-09

From: <http://e-cigarette-research.info/> - **E-Cigarette Research**

Permanent link: <http://e-cigarette-research.info/doku.php/research:documents:wjnw8k5c>

Last update: **2014/03/28 16:46**

