

EUROFINS DR. SPECHT LABORATORIEN GMBH · POSTFACH 90 02 64 · D 21042 HAMBURG

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AZ: 11-57021**Test-Report****01.09.2011-tan****Determination of tobacco specific nitrosamines (TSNA) in aroma fluid for e-cigarettes**

YOUR ORDER: by e-mail 22.08.2011
SAMPLE RECEIPT: 18.08.2011
PACKING: 1 glas vessel with screw cap
MARKING: Americano high – 18 mg/mL nicotine
LABORATORY SAMPLE: **AROMA FLUID**

Analysis: Start: 26.08.2011 End: 29.08.2011

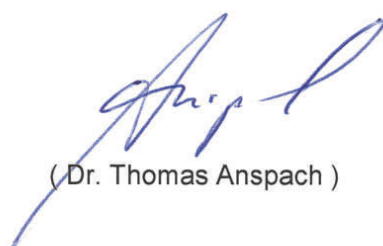
APPLIED METHOD:

Dilution of the sample followed by addition of isotope-labelled internal standards and subsequent analysis by means of LC-MS/MS (in accordance to lab internal method P-14.155)

- 0.333 mL of sample was fortified with approx. 6 ng of isotopically labelled internal standards (d4-NAB, d4-NAT, d4-NNK and d4-NNN, respectively) and filled up to 1 mL with MeOH / 0.1 mol/L ammonium acetate (50/50; v/v) resulting in a nicotine concentration of 6 mg/mL
- for quantification a linear calibration curve was set up covering a concentration range of 0.25 ng/mL up to 100 ng/mL for NAB, NAT, NNK and NNN, respectively; each calibration point contains the same amount of isotopically labelled internal standards as the sample of interest

RESULT OF ANALYSIS:

	TSNA found	Limit of detection	Limit of quantification
NNN (N- Nitrosonornicotine)	not detectable	5 ng/mL sample 0.25 ng/mg nicotine (0.25 ppm)	10 ng/mL sample 0.5 ng/mg nicotine (0.5 ppm)
NAT (N-Nitrosoanatabine)	not detectable	5 ng/mL sample 0.25 ng/mg nicotine (0.25 ppm)	10 ng/mL sample 0.5 ng/mg nicotine (0.5 ppm)
NAB (N-Nitrosoanabasine)	not detectable	5 ng/mL sample 0.25 ng/mg nicotine (0.25 ppm)	10 ng/mL sample 0.5 ng/mg nicotine (0.5 ppm)
NNK (4-(N-methylnitrosamino)- 1-(3-pyridyl)-1-butanone)	not detectable	5 ng/mL sample 0.25 ng/mg nicotine (0.25 ppm)	10 ng/mL sample 0.5 ng/mg nicotine (0.5 ppm)


(Dr. Thomas Anspach)

For representative LC-MS/MS chromatogram please refer to the following pages.



Figure 1: two mass transitions of the isotopically labelled internal standards (added to the sample) and the corresponding TSNAs; the peaks of the isotopically labelled internal standards refer to a concentration of 18 ng/mL sample and 1 ng/mg nicotine (1 ppm), respectively