Reviewer’s report

**Title:** Standardised exhaled breath collection for the measurement of exhaled volatile organic compounds by proton transfer reaction mass spectrometry

**Version:** 2  **Date:** 3 April 2013

**Reviewer:** Konstantinos Kostikas

Reviewer’s report:

The study by Bikov et al. evaluated the effects of expiratory flow rate and a breath-holding maneuver on the levels of two exhaled gases, i.e. ethanol and acetone, in 15 healthy volunteers. The authors have incorporated a simple method for their measurement using Proton Transfer Reaction Mass Spectrometry (PTR-MS). This is a well-designed and conducted study that provides useful insight in exhaled breath volatile organic compound (VOC) analysis. My specific comments are the following:

The paragraph "Subjects and study design" should be the first one in the Methods section, followed by "Standardised exhaled air collection".

What were the exclusion criteria for the healthy volunteers?

Why did the authors decide that the subjects abstain from food for 6 vs. 2 hours in the two visits? What is the meaning of smoking abstinence in non-smokers?

The authors have used parametric tests for comparisons and correlations. However, the small samples may not allow for proper normal distribution of their data. They may need to consider the use of non-parametric tests for their analysis.

Bland and Altman plots are required for the proper interpretation of this analysis and should be provided.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests