Reviewer's report

Title: 2-aminoacetophenone as a potential breath biomarker for Pseudomonas aeruginosa in the cystic fibrosis lung

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Reviewer: Huw Williams

Reviewer's report:

Rapid non-invasive methods for the early detection of the presence of respiratory pathogens are a potentially very valuable tool for the clinician, as well as for the microbiology research community. In this manuscript the authors set out to test whether the volatile compound 2-aminoacetophenone that is produced by Pseudomonas aeruginosa could be useful as a biomarker of P. aeruginosa infection of the cystic fibrosis lung.

The work is a useful, cross-sectional, preliminary study that demonstrates a significant correlation between the presences of 2-AA in breath and the detection of P. aeruginosa by culture-based methods in CF patients. However, the detection of 2-AA in a significant fraction of healthy controls and patients not colonised with P. aeruginosa cast doubt of the wisdom of relying on this approach in a clinical setting. The effect of culture conditions on 2-AA production by P. aeruginosa has not been explored here and the effect of oxygen levels would be particularly interesting to determine given the recognition that the availability of oxygen is likely to be variable within the CF lung.

MINOR REVISIONS

Figure 1. Would be more user friendly if more fully labelled. Also labelled Fig 1-4 rather than Fig. 1 A-D.

Much of the tabulated data could be moved to supplementary information.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that i have no competing interests