Reviewer's report

Title: Sputum and nasal lavage lung-specific biomarkers before and after smoking cessation.

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Reviewer: Charles McSharry

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Minor Essential Revisions
Adequacy of sputum samples: Can the authors clarify that the only accepted samples that had low squamous cells as well as good viability. They describe this as either/or.

Regarding the point raised abut matching numbers of control subjects with patients; it is irrelevant that the procedure is unpleasant. It would be equally unpleasant for the patients. Your study would have been improved by adequate powering.

The reasons why the 4 particular mediators were chosen is what I was hoping the authors might explain. Please consider adding a convincing sentence why the particular mediators were appropriate. Furthermore, some validation of these is very important to the current manuscript; I don’t think it is proper to use analysis of data relevant for this paper as a means to generating another paper. I think the authors should strongly consider including that information in this paper.

Furthermore, in the rebuttal letter, the authors suggest that the biomarker concentrations dont correlate with each other. This data is important in case it is informative of the mechanism for the prolonged inflammation, or indeed if there are inconsistencies about the measurement. The study may not have been designed to investigate associations but it is easy to do. I think it would be helpful if this was included.

Discussion: sputum induction is a non-invasive test rather than semi-invasive.

The authors suggest in the rebuttal that the mediator concentrations did not correlate or were different between sputum and nasal wash. I think this data should be included in the manuscript to improve interpretation of the observations.

Small detail; the CC16 concentrations on Table 3 could be expressed as ng/ml to improve the appearance of the figures.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'