Reviewer's report

Title: The intake of maqui (Aristotelia chilensis) berry extract normalizes H2O2 and IL-6 concentrations in exhaled breath condensate from healthy smokers - An explorative study.

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Reviewer: Ujjawal Gandhi

Reviewer's report:

In the present manuscript, the authors have investigated the effect of maqui berry extract ingestion on H2O2 and IL-6 in the exhaled breath condensate (EBC) from healthy smokers. Using an open, uncontrolled study with 15 smokers, they conclude that H2O2 levels decrease and IL-6 levels increase after two-week ingestion, and thus maqui berry extract might have an anti-inflammatory/anti-oxidant potential. This is a novel and very interesting topic of research; not much has been known about the anti-oxidant effects of this polyphenol-rich nutraceutical in smokers. However there are certain comments and questions that may help improve this manuscript:

Major Revisions:

1. Although the authors have cited McCrea et al (1994) to support their finding of lower IL-6 concentrations in smokers than in non-smokers, currently there is a lot of evidence showing that IL-6 is a pro-inflammatory cytokine which is increased in the EBC of smokers and those with other chronic respiratory pathologies [1-7]. It is very surprising to see that in the present study, IL-6 is lower in smokers, and then increases with maqui berry extracts to levels comparable with those from non-smokers. If this finding is actually true, it would contradict the strong current evidence. So the authors might want to discuss their results in further detail and explain why they believe this might be possible given the current evidence that is exactly opposite to their findings. Or they might want repeat their experiment with a larger study population (currently, n=8 for nonsmokers; n=15 for smokers) and check if that would alter the results.

2. Markers of inflammation such as nitrites, total protein, neutrophil chemostatic activity have been conclusively shown to be increased in EBC of young healthy smokers [5]. The authors might want to use such known markers to test the effects of maqui berry extracts in their healthy young smoking subjects.

3. The authors need to provide more details in their Introduction/Background section about (i) why they chose to measure IL-6 and H2O2 in EBC, and (ii) rationale for using mild/asymptomatic smokers as opposed to symptomatic smokers.

Minor Revisions:
1. Please provide methodology for measuring the concentrations of total polyphenol content and FRAP that the authors have determined in their laboratory.

2. Please provide suitable reference(s) for the method described to obtain and process the exhaled breath condensates (EBC) from subjects.

References:

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