Reviewer’s report

Title: Dietary antioxidants protect epithelial cells from oxidant-induced apoptosis

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Reviewer: Dr Andre Buret

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Accept after revision, which I do not need to see

I read with interest this article written by MJS Miller and entitled Dietary antioxidants protect gut epithelial cells from oxidant induced apoptosis'. Using in vitro cell lines of gastric and small intestinal origin, this well written manuscript demonstrates that cat's claw and green teas, and to a lesser extent Vitamin C, protect gastrointestinal epithelial cells from oxidant induced cell death. The findings also indicate that the protective mechanisms, while still unclear, are independent of direct interactions with the injurious oxidant.

Specific recommendations: clarifications

1. Methods. Add a section describing how statistical analysis was carried out

2. The authors clearly appreciated the need to assess cell numbers in their samples prior to quantifying levels of apoptosis / necrosis. As standard cell numbers in each sample are crucial for proper comparison of results, the results from the cell proliferation' experiments could be included in the text, rather than stating data not shown'

3. Table 2: A ‘*’ should be inserted in the proper column of Table 2 to illustrate the significant effect of green tea on cell viability, as stated in the text (p7, para 2, line 3). Legend of Table 2 should be completed accordingly.

4. p.7, last line: '... but these changes were not significant...' This statement does not seem to be consistent with Figure 4 and its legend {...'all antioxidants reduced the extent of apoptosis.'}. Amend accordingly.

5. p8, line 2: '...values were lowered to a level that was indistinguishable from control'. Is this true, statistically, for ascorbate as well?

6. Conclusion: if the concentration of cat's claw and Green teas used in this study are within those physiologically encountered when drinking a cup of these products, it may be worthwhile emphasising it
in the text to underscore the relevance of these observations.

7. Figure legends:
Fig 1, last line: ...(P>0.1), should this read P
Figure 3, 4, 5: Clarify the meaning of the symbols used for Statistical significance' in the Figure, including a specification as to versus' what group this is compared to.

Minor revisions:
1. p4, line 1... been described to (add: be') more...
2. p9. paragraph 2, line 9:...'South America where (add it') is used to'...

General comments:

This is a very interesting study which fits well within the context of the anti-inflammatory properties of green and cat’s claw teas.

Competing interests:

Finally, I would like to clearly state that I may have competing interests, as I do hold shares in 'Rainforest Phytoceuticals' the company which supplied one of the products studied in these experiments (cat’s claw).