

Reviewer's report

Title: Sparing effects of selenium and ascorbic acid on vitamin C and E in guinea pig tissues

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Reviewer: Klaus Eder

Reviewer's report:

General

This is an interesting article dealing mainly with the effects of dietary Se and ascorbic acid on tissue AA/DHAA and AT concentrations. The authors used guinea pigs which are appropriate for this question. The study is well designed and conducted; the manuscript is well prepared and easy to follow and interpretations and conclusions are fair. Tables and Figures are also well prepared. It is shown that Se spares ascorbic acid in an animal species unable - like humans - to synthesize vitamin C. Therefore these data are also relevant for human nutrition. I have only few suggestions for discretionary revision.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

- Methods: The authors report that AA was given via oral dosage. This is not quite clear. Was a gastric tube used for this?

- Results: AT concentrations: The authors state (page 10, bottom and page 11, top) that there was no difference in AT concentrations at week 5 between the four groups. This correct with respect to statistical evaluation of these data. A view on Table 4, however, shows that AT concentration in most of the tissues was clearly lower in SeD/MC than in the other groups. Undoubtedly, the reason for the lack of statistical significance is that SEMs were relatively high and n was relatively small. I would recommend to point out that AT concentrations in the SeD group were lower than those in the SeM and SeN groups although there were no significant differences. Maybe there was a tendency ($P < 0.10$ or 0.15)?

Similar is true for liver and plasma lipid peroxide levels. There is a clear trend towards a reduction from SeD via SeM to SeN.

What next?: Accept after discretionary revisions

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.