Reviewer’s report

Title: Panax Ginseng and Salvia Miltiorrhiza Supplementation Abolishes Eccentric Exercise-Induced Vascular Stiffening: a Double-blind Randomized Control Trial

Version: 0 Date: 04 Feb 2016

Reviewer: John J. Durocher

Reviewer's report:

General Comments:

This study is related to other studies from the Tanaka laboratory and examines the effect of a 7-day combined Panax Ginseng and Salvia Miltiorrhiza supplement on inflammation, range of motion, and arterial stiffness after eccentrically-biased (downhill) running. The study appears to have been carefully conducted, uses a double-blind placebo-controlled design, and the paper is novel. While there are significant results from the herbal treatment, I think some results may currently be overstated (mostly related to the correlation analyses). My concerns are outlined below.

MAJOR:

On page 12 in your "Statistical Analyses" section please clarify if you used 5 time points (i.e. pre, 90 min, 24 hr, 48 hr, and 72 hr post) in your repeated measures ANOVA and mixed model ANOVA analyses.

Some Conclusions may be currently overstated. For example, on line 21 of page 14 you refer to how herb supplementation "abolished the increase in arterial stiffness." This may be too powerful of a statement because you state that cfPWV was only increased at 24 hours post
exercise in the placebo group. On line 56 of the same page I would add "at 24 hours post
exercise" after "The increase in plasma CK concentration was greater in the placebo group" to
clarify that plasma CK was not significantly higher at all time points.

On line 27 of page 15 you state that "Downhill running increased arterial stiffness significantly
after 24 to 48 hr…" According to Figure 5 and your Results section, you indicate it was only
increased at 24 hours post. Please correct the discrepancy.

On lines 27-30 on page 16 of the Discussion you state that "changes in arterial stiffness were
associated with the corresponding changes in plasma IL-6 concentrations." According to Table 5
there is a moderate correlation at 48 hours post, but not at 24 hours post. This should be clarified
since there were only significant changes of IL-6 in the herb group at 24 hours post (Table 4) and
in cfPWV in the placebo group at 24 hours post (Figure 5).

I think the limited impact of the correlation analyses should be mentioned in the limitations
paragraph. Several of your correlations are using variables that have not significantly changed at
the time points of the "significant" correlation.

MINOR:

Abstract:

On lines 46-47 of page 2 you have "CPR" instead of "CRP".

Introduction:

On about line 44 of page 5 I would suggest deleting "Given that a mixture of." I think this would
help to clarify the message in the sentence.
Methods:

On line 48 of page 7 your first sentence under "Supplement administration" is currently confusing. I would suggest stating how many pills they took in the morning and how many in the evening, or you could delete the portion of the sentence in the parentheses.

On the first line of page 9 I don't think the reference that you list is correct (perhaps it should be another Peake et al. paper).

Results:

On line 30 of page 13 I would suggest using "either group" rather than "both groups."

Starting on the last line of page 13 you state that the "changes in TNF-α were associated with changes in cfPWV at 24 to 48 hours after exercise." I feel this finding could be limited by the fact that you don't report any significant changes in TNF-α within Table 4.

Please clarify the units for muscle soreness in Figure 3.

Based on your written results it appears that there should be an asterisk over the 24 hour mean for the placebo group in Figure 5. The Figure 5 legend should also be updated accordingly. Please also comment to reviewers why you think that cfPWV may be increased at 24 hours in this study while the increase took 48 hours in one of your previous studies (Barnes et al., 2010) and in a similar study by Burr et al. This could potentially be added to your Discussion section.

Discussion:

On line 28 of page 14 I would again suggest using "either group" rather than "both groups."
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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