

Reviewer's report

Title: Mangosteen juice blend for the reduction of inflammation (C-reactive protein) in obese subjects: a randomized, double-blind, placebo-controlled, dose finding study.

Version: 3 **Date:** 2 June 2009

Reviewer: Ryan Bradley

Reviewer's report:

Major Compulsory Revisions:

Title:

Given the admittedly exploratory nature of the trial, I would recommend changing the title to " An Exploratory Evaluation of Mangosteen Juice Blend on Biomarkers of Inflammation..." or "Evaluation of Mangosteen Juice Blend on Biomarkers of Inflammation: A Pilot.... " .

The title continues to overstate the findings for CRP, which remains misleading, given the preliminary results. A more objective title it needed, that does not suggest positive results.

Analyses:

Although the authors somewhat justified their choice of analysis, they reference between group comparisons numerous times in their results, without a rigorous between group comparison. I can let this go, as they do immediately note their limitations in the discussion, however the issue of multiple comparisons and significance threshold must be addressed. Numerous results are referenced as "significant" if the t-test resulted in a p value, however the authors tested four groups, at three time points, for each biomarker, and this the probability of one test resulting in a p value < 0.05 is no longer less than 5%, but 5% x n comparisons, thus the chances for Type 1 error are great.

The only acceptable solution is to refer to all of these findings are trends toward significance, and to discuss the multiple comparisons issue in the results. All statements of "significance" are overstated.

Interpretation of CRP changes:

I remain troubled by the references to reductions in the 18oz group vs, placebo, as it is clear the only reason for this approaching significance is because of the low variability in the 18oz group and the placebo group, not because the reductions were robust, in fact the point estimate for the mean reductions in the 18oz. group were much lower than they were in the lower dose groups. The reported results, and certainly the stated "significance", is clearly more a function of baseline differences in variability, than in robust reductions. This deserves

discussion.

Minor Essential Revisions:

The authors refer to F2-isoprostanes erroneously throughout the manuscript. Isoprostanes are neither a measure "antioxidant capacity" nor "amount of reactive oxygen species", rather isoprostanes are specifically biomarkers for lipid peroxidation, which granted is a measure of oxidative stress, but does not quantify "amount" of ROS, or capacity against ROS change. Clarify throughout the paper.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.