Reviewer’s report

Title: Astaxanthin mitigates cobalt cytotoxicity in the MG-63 cells by modulating the oxidative stress

Version: 0 Date: 18 Jan 2017

Reviewer: Sarah Campbell

Reviewer’s report:

I believe the manuscript is lacking important Introduction (background) and Discussion information. Please consider adding more on cobalt and its toxicity, what is the standard of care for cobalt toxicity, and typical cobalt blood levels seen in patients experiencing/not experiencing adverse effects of MoM hip replacement. Also consider adding additional information on ASX including its pharmacokinetics (if known) to help the reader understand why you are proposing ASX to help ameliorate cobalt toxicity (ie, can it be taken orally, is it absorbed well in the GI, etc.). In the Discussion, please draw the conclusions for the reader including how the concentrations of cobalt used in the studies correlate to patients with MoM hip replacements and how the doses of ASX chosen are relevant to human populations (can these ASX concentrations be achieved without side effects in humans). Please remove discussion statements from the Results section and include in the Discussion section.

Please add the IC50 for cobalt in the cell line used.

Pages of manuscript were not numbered and line identification is repeated from 1-65 on each page. This makes it difficult to site specific comments relating to specific sentences. Please correct.

Please review entire manuscript for the correct use of the English language.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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

Unable to assess

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

Unable to assess
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:

Needs some language corrections before being published

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