Reviewer's report

Title: The 3-hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors, simvastatin, lovastatin and mevastatin inhibit proliferation and invasion of melanoma cells.

Version: 1 Date: 9 September 2007

Reviewer: Antoni J Duleba

Reviewer's report:

General
The manuscript presents interesting and comprehensive evaluation of effects of three selected statins on proliferation, apoptosis and parameters related to invasiveness of melanoma cells. The data are of interest and advance knowledge of the effects of statins on melanoma cell lines.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. Introduction section should present relevant data describing key findings of previous studies evaluating effects of statins on melanoma cells.
2. Significant portion of the presented results is confirmatory in nature. Authors should clearly specify which aspect of their work is novel.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
3. Methods section, cytotoxicity assays subsection, second sentence: “Toxicity assays were carried out at least twice in triplicate…. and each assay contained eight replica….”. The sentence is unclear and should be revised.
4. Methods section, apoptosis assay subsection. More details should be provided, especially to clarify to the reader the function of 7-AAD as an indicator of cellular structural integrity.
5. Methods section, ECM protein binding subsection. Please clarify abbreviation ECM. Also, a clarification of wavelengths used (405 nm vs. “reference” wavelength of 620 nm) is needed.
6. Results section: relevance of studying lung carcinoma and breast carcinoma cell lines should be explained.
7. Results section: concentration-dependent effects of individual statins on melanoma cell lines should be presented in detail. Table 1 is not sufficient. For example, it is important to present data on minimal concentrations of statins at which significant inhibition of proliferation was observed.
8. Results section, presentation of regression analysis correlating late apoptosis and statin concentrations would benefit from including the r-values.

9. Results section, subsection presenting effects of statins on cell migration and invasion. Second sentence states that individual cell lines were “invasive and motile to varying degrees”. Presentation of statistical analysis is recommended.

10. Results section, last subsection presenting effects on adhesions: reference to Figure 4 should be provided.

11. Figures 1, 2 and 3 should present statistical differences between treatments and/or controls.

12. Figures 4 and 5 should have appropriate clarification of Y-axes. O.D. 560 is not sufficient.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests