REVIEW REPORT: SAIP CONFERENCE PROCEEDINGS

ABSTRACT ID:	64
TITLE OF PAPER:	Photobiomodulated Differentiation of Adipose-derived Stem Cells into Osteoblasts
AUTHORS:	D Da Silva, A Crous and H Abrahamse

ASPECT	**BEST**	**5**	**4**	**3**	**2**	**1**	**WORST**
Scope	Relevant		X				Irrelevant
Organisation	Excellent		X				Poor
Clarity	High			X			Low
Length	Too Short			X			Too Long
References	Adequate		X				Incomplete
Correctness	Correct			X			Incorrect
Significance	High	X					Low
Originality	High	X					Low
Contribution	Significant		X				No New
Expression	Clearly		X				Vague
Grammar	Good		X				Poor

Recommendation

a) Accept:
b) Accept with Correction (Minor Revision):
c) Accept with Correction (Major Revision): X
d) Reject:

COMMENTS

The proceeding should be 3-6 pages in length. This proceeding is 7 pages and should be shortened. The references could be shortened by removing the article title as indicated in the writing guidelines to take up less space (e.g. [1] Strite S and Morkoc H 1992 *J. Vac. Sci. Technol. B* **10** 1237).

What was the aim of the study? The study aim/s should be included in the proceeding. The aim of the study is provided right at the end, in the discussion and conclusion. One must read the entire proceeding to find out what the study aim is.

Introduction:

1) The following sentence needs to be rephrased “At the frontline of RM stands SC therapy because of its’ ability to indefinitely self-renew and transdifferentiate into various cell types [4].” A therapy is not able to self-renew or differentiate.

Materials and Methods:

1) Immortalized ADMSCs was used in this study. Were these cells isolated by the researchers or was a commercial cell line used? Provide details on the cells.

2) "ADMSCs were cultured for one week in osteogenic differentiation media containing complete Dulbecco's Modified Eagle Media (DMEM) media" Did the media consist of osteogenic differentiation media (supply details) containing DMEM (at what ratio were these added), or was the media DMEM? Please clarify.
3) There is no mention of controls. Were controls included in the experiments?
4) The '2' should be subscript, not superscript "in 5% CO^2 and"
5) The calculations provided use radius (r^2) yet the size provided is diameter (35 mm). Either change the calculations to reflect diameter or provide the radius.
6) Table 1. Laser Parameters: Irradiation time for 825 and 525 nm should be provided in seconds as indicated in the first column (Irradiation Time (s)).
7) The authors did not give a brief description of the system used to irradiate the cells or make a reference if the system has been described elsewhere. How was light from the diodes directed to cells, was irradiation from the top or bottom of the petri dishes?
8) What are CD44 and CD166 markers of?
9) The abbreviations ATP and LDH should be written out in full the first time they are used with the abbreviation in brackets.
10) ATP can also be used to measure cell viability. How was the methodology adapted to measure proliferation? Details should be described or referenced.
11) The authors did not give a brief description of the methodologies used. A brief description should be provided, or references added where this information can be accessed. Assay/kit names and or catalogue numbers and manufacturer details should be provided.
12) Provide details on statistical analysis. How many times were experiments repeated? What software was used to statistically analyze data, and what statistical tests were used?

Results:

1) Figure 1: Flow cytometry analysis indicated a decline in CD44 and CD166 in all experimental groups at 7 days. Was this decline significant or not? Was there a difference between the two wavelengths used? When looking at the results in figure 1, should we be looking at the values in the V3-L or V3-R quadrant?
2) Cell samples were collected at 24 hours, 48 hours and 7 days post-irradiation. Why were the results for CD44 and CD166 at 48 hours not included? If the issue is a matter of space, these results could be displayed in a table format.
3) Scale bars in figure 2 are not visible.
4) Figure 3 shows results for a standard – what was used as a standard for ATP proliferation, viability and cytotoxicity. What is the difference between the standard and control in these graphs? There is no mention of standards or controls in the methodology section.
5) The figure legend (figure 3) should come under the figure.
6) "A significant increase in ATP (Figure 3 A) was identified in the standard for 24 hours and 48 hours." – what is this compared to, the control?
7) "PBM did not significantly increase cell proliferation…" Except for cells irradiated at 825 nm at 24 h (as indicated in the graph).
8) For the LDH results, authors indicate that "…PBM treatment has not induced plasma membrane damage to the cell populations." How do they then explain the increase in leaked LDH seen at 7 days?

Discussion and Conclusion:

1) "At 7 days post-PBM treatment, a decreased cell proliferation occurred amongst the Green PBM and NIR-Green PBM experimental groups." Is this decrease significant? It is not indicated on the graph. It is not surprising that cellular proliferation starts to decrease, especially after 7 days incubation in the same culture plate. The culture plates may be overgrown by 7 days. This may also explain the increased LDH leaked from cells seen at 7 days.