

## ESPS Peer-review Report

**Name of Journal:** World Journal of Stem Cells

**ESPS Manuscript NO:** 2935

**Title:** An improved serum-free medium that increases cardiomyogenesis of human pluripotent stem cells by enhancing cell survival

**Reviewer code:** 02446174

**Science editor:** Wen, Ling-Ling

**Date sent for review:** 2013-03-28 09:28

**Date reviewed:** 2013-04-03 00:34

| CLASSIFICATION                                     | LANGUAGE EVALUATION   | RECOMMENDATION                      | CONCLUSION   |
|--|---|-------------------------------------|--|
| <input type="checkbox"/> Grade A (Excellent)       | <input type="checkbox"/> Grade A: Priority Publishing                 | Google Search:                      | <input type="checkbox"/> Accept                        |
| <input type="checkbox"/> Grade B (Very good)       | <input checked="" type="checkbox"/> Grade B: minor language polishing | <input type="checkbox"/> Existed    | <input type="checkbox"/> High priority for publication |
| <input checked="" type="checkbox"/> Grade C (Good) | <input type="checkbox"/> Grade C: a great deal of language polishing  | <input type="checkbox"/> No records | <input type="checkbox"/> Rejection                     |
| <input type="checkbox"/> Grade D (Fair)            | <input type="checkbox"/> Grade D: rejected                            | <input type="checkbox"/> Existed    | <input type="checkbox"/> Minor revision                |
| <input type="checkbox"/> Grade E (Poor)            |   | <input type="checkbox"/> No records | <input checked="" type="checkbox"/> Major revision     |

## COMMENTS TO AUTHORS

The manuscript entitled "An improved serum-free medium that increases cardiomyogenesis of human pluripotent stem cells by enhancing cell survival" by Sherwin Ting and collaborators intends to be the first step in developing an inexpensive and efficient cardiomyocyte differentiation protocol that can be used by commercial companies to produce cardiomyocytes. They also infer that this is the first report of the benefits of BSA and HySoy on improving cardiomyogenesis of pluripotent human stem cells. This work seems to be relevant in the aspect of improving cardiomyocyte differentiation from human stem cells but some experiments and major revision before acceptance must be done. First of all it would be very interesting if the authors also do apoptosis tests of all improved culture conditions to distinguish between high cardiomyocyte number from improved and normal/control culture conditions. It must be done at the time zero (with stem cells, before induction of cardiomyocyte differentiation), and in the middle time (when stem cells get cardiomyocyte fate). Second, they must also perform experiments during cardiomyocyte differentiation testing for proliferation rate. It must be done at the time zero (with stem cells, before induction of cardiomyocyte differentiation), and in the middle time (when stem cells get cardiomyocyte fate). Third, it would be interesting if they also repeat real time PCR for another cell differentiated markers as for neuronal cells, fibroblast, adipocyte, and include ANP, BNP and MYH7, to verify cardiomyocyte normal physiological conditions. I also inquire to the authors to characterize the cell differentiated karyotype, as stem cells after so many passages can present cell cycle arrest (it can be answered with cell apoptotic and proliferation assays) and aneuploidy. One more experiment that can elucidate the percentage of cardiomyocyte produced is to perform FACS for double-labeled cardiomyocyte and



## **Baishideng Publishing Group Co., Limited**

Flat C, 23/F., Lucky Plaza,  
315-321 Lockhart Road,  
Wan Chai, Hong Kong, China

---

stem cells markers during differentiation to the final differentiated state. Minor revision: English should be improved.

## ESPS Peer-review Report

**Name of Journal:** World Journal of Stem Cells

**ESPS Manuscript NO:** 2935

**Title:** An improved serum-free medium that increases cardiomyogenesis of human pluripotent stem cells by enhancing cell survival

**Reviewer code:** 00609289

**Science editor:** Wen, Ling-Ling

**Date sent for review:** 2013-03-28 09:28

**Date reviewed:** 2013-04-09 21:22

| CLASSIFICATION  | LANGUAGE EVALUATION  | RECOMMENDATION                      | CONCLUSION   |
|---|--|-------------------------------------|--|
| <input type="checkbox"/> Grade A (Excellent)            | <input checked="" type="checkbox"/> Grade A: Priority Publishing     | Google Search:                      | <input type="checkbox"/> Accept                        |
| <input checked="" type="checkbox"/> Grade B (Very good) | <input type="checkbox"/> Grade B: minor language polishing           | <input type="checkbox"/> Existed    | <input type="checkbox"/> High priority for publication |
| <input type="checkbox"/> Grade C (Good)                 | <input type="checkbox"/> Grade C: a great deal of language polishing | <input type="checkbox"/> No records | <input type="checkbox"/> Rejection                     |
| <input type="checkbox"/> Grade D (Fair)                 | <input type="checkbox"/> Grade D: rejected                           | <input type="checkbox"/> Existed    | <input checked="" type="checkbox"/> Minor revision     |
| <input type="checkbox"/> Grade E (Poor)                 |  | <input type="checkbox"/> No records | <input type="checkbox"/> Major revision                |

## COMMENTS TO AUTHORS

This is an interesting manuscript describing the effects of albumin and soy hydrolysate on the cardiac differentiation of human pluripotent stem cells in the presence of MAP kinase inhibitors. The premise of the experiment is that cardiac differentiation with MAPK inhibitors suffers from low viability and produces limited cardiomyocyte yields. The authors show that these two supplements, alone or in combination, improve cardiomyocyte yields in 3 human pluripotent stem cell lines. The strengths of the paper are: 1) The use of these supplements in the context of cardiac differentiation of human pluripotent stem cells is novel; 2) There is good functional characterization of the cardiomyocyte populations. The weakness is that no mechanism is provided.

## ESPS Peer-review Report

**Name of Journal:** World Journal of Stem Cells

**ESPS Manuscript NO:** 2935

**Title:** An improved serum-free medium that increases cardiomyogenesis of human pluripotent stem cells by enhancing cell survival

**Reviewer code:** 02446341

**Science editor:** Wen, Ling-Ling

**Date sent for review:** 2013-03-28 09:28

**Date reviewed:** 2013-04-10 19:41

| CLASSIFICATION  | LANGUAGE EVALUATION   | RECOMMENDATION                      | CONCLUSION   |
|---|---|-------------------------------------|--|
| <input type="checkbox"/> Grade A (Excellent)            | <input type="checkbox"/> Grade A: Priority Publishing                 | Google Search:                      | <input type="checkbox"/> Accept                        |
| <input checked="" type="checkbox"/> Grade B (Very good) | <input checked="" type="checkbox"/> Grade B: minor language polishing | <input type="checkbox"/> Existed    | <input type="checkbox"/> High priority for publication |
| <input type="checkbox"/> Grade C (Good)                 | <input type="checkbox"/> Grade C: a great deal of language polishing  | <input type="checkbox"/> No records | <input type="checkbox"/> Rejection                     |
| <input type="checkbox"/> Grade D (Fair)                 | <input type="checkbox"/> Grade D: rejected                            | <input type="checkbox"/> Existed    | <input checked="" type="checkbox"/> Minor revision     |
| <input type="checkbox"/> Grade E (Poor)                 |   | <input type="checkbox"/> No records | <input type="checkbox"/> Major revision                |

## COMMENTS TO AUTHORS

The authors have carried out an interesting study in which they develop an inexpensive and efficient cardiomyocyte differentiation protocol that can be used to produce cardiomyocytes. They demonstrate the benefits of BSA and HySoy on improving cardiomyogenesis of pluripotent human stem cells. The organization of the manuscript is adequate and the experimental design is well done. However, the structure of the manuscript must be improved. Authors should write the manuscript according to the "Instructions for Authors". Specific comments 1. Title: Title exceeds 12 words 2. Running title is absent 3. In page 8 - Line 10: "Supplementary Table 1" must be changed by "supplementary Table 1". - Line 21: "improved the metabolic state" must be changed by "improved the metabolic state". 4. In page 9 - Line 9: "cardiac makers(sarcomeric actinin and MHC)" must be changed by "cardiac makers (sarcomeric actinin and MHC)". - Line 10: "as compared to the control, a general trend of increased level" "as compared to the control. A general trend of increased level" 5. In the text, the reference numbers must be placed in square brackets in superscript at the end of citation content or after the cited author's name. The references should be written as described in "Instructions for Authors". 6. The manuscript must be revised to avoid grammatical errors.