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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46496

Title: Induction of differentiation of human stem cells ex vivo: toward large-scale platelet production

Reviewer's code: 01851506

Reviewer's country: Japan

Science editor: Jin-Lei Wang

Reviewer accepted review: 2019-03-27 04:38

Reviewer performed review: 2019-04-02 03:21

Review time: 5 Days and 22 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
[ ] Grade A: Excellent	[ ] Grade A: Priority publishing	[ ] Accept (High priority)	Peer-Review:
[ ] Grade B: Very good	[Y] Grade B: Minor language polishing	[ ] Accept (General priority)	[Y] Anonymous
[Y] Grade C: Good	[ ] Grade C: A great deal of language polishing	[Y] Minor revision	[ ] Onymous
[ ] Grade D: Fair	[ ] Grade D: Rejection	[ ] Major revision	Peer-reviewer's expertise on the topic of the manuscript:
[ ] Grade E: Do not publish		[ ] Rejection	[ ] Advanced
			[Y] General
			[ ] No expertise
			Conflicts-of-Interest:
			[ ] Yes
			[Y] No

SPECIFIC COMMENTS TO AUTHORS

In this review the authors describe the brief history and methods for production of platelet in vitro. In particular they focus on iPSCs as a promising resource for future clinical application. In general the review is comprehensive and the problems inherent

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to use of iPSCs and to differentiation into platelet are well discussed. However, the reviewer has some concerns as following. (1) Some abbreviations are not defined (for example, TPO, THPO page 5, Ab in page 6, etc). (2) Some texts are difficult to understand. For example, "Usually, a proportion of cultured platelets is often observed in a state of preactivation, with the absence of agonists such as ADP or thrombin," page 13, "We recently found that the rotary cell culture system (RCCS) plays a potential role in megakaryopoiesis and significantly improves the efficiency of platelet generation (Figure 2D), page 15, etc). (3) It would be better to discuss more the limitation and future perspective of the present devices to produce platelet in large scale and to guarantee the quality of platelet for transfusion.

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

[ ] The same title

[ ] Duplicate publication

[ ] Plagiarism

[Y] No

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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46496

Title: Induction of differentiation of human stem cells ex vivo: toward large-scale platelet production

Reviewer's code: 02446280

Reviewer's country: Russia

Science editor: Jin-Lei Wang

Reviewer accepted review: 2019-03-28 04:29

Reviewer performed review: 2019-04-02 05:39

Review time: 5 Days and 1 Hour

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection	[Y] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection	Peer-Review: [Y] Anonymous [ ] Onymous Peer-reviewer's expertise on the topic of the manuscript: [ ] Advanced [Y] General [ ] No expertise Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The manuscript entitled "Induction of differentiation of human stem cells ex vivo: toward large-scale platelet production" by Lei et al. addresses very important field of regeneration medicine and stem cell technologies specifically large scale production of

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cellular products. To this end blood components are the most demanded cell types also having advantage of a huge experience in cell transplantation. Platelet transfusion remains the most effective way to treat patients suffering from thrombocytopenia and/or platelet dysfunction caused by different reasons. A better understanding of the cellular and molecular mechanisms of megakaryopoiesis and platelet differentiation may provide optimized strategies for their scalable in vitro production. The paper is well structured and written and contains a lot of modern helpful information both for general and qualified readers. Illustrations are rather comprehensive. There are few minor recommendations. Megakaryocytic maturation is accompanied by polyploidization. Ploidy is the number of complete sets of chromosomes in a cell. It is the number of nuclei (16～128 N) or amount of DNA as it were written by the Authors on p. 6 and Fig.1 legend. In vivo, in vitro, ex vivo should be written in Italics throughout the text and figure legends.

INITIAL REVIEW OF THE MANUSCRIPT

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