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ESPS Peer-review Report
Name of Journal: World Journal of Stem Cells
ESPS Manuscript NO: 2160
Title: Epigenetics and chromatin plasticity in embryonic stem cells
Reviewer code: 02446280
Science editor: Zhai, Huan-Huan
Date sent for review: 2013-02-04 19:54
Date reviewed: 2013-02-05 13:25

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[ ] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[ ] Accept
[ ] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
[Y] Grade C (Good)	[ ] Grade C: a great deal of language polishing	[ ] No records	[ ]Rejection
[ ] Grade D (Fair)	[ ] Grade D: rejected	BPG Search:	[Y] Minor revision
[ ] Grade E (Poor)		[ ] Existed	[ ] Major revision
		[ ] No records	

COMMENTS TO AUTHORS
Well written reveiw that can be published with minor modifications. 1. Recently a role of a novel state of cytosine methylation: 5-hydroxymethylcytosine and Tet proteins in ESCs biology was discovered. It would be great to add this information as a separate part of the reveiw. 2. It would be also very helpful to Readers to have Conclusion section at the end of the manuscript summarizing Authors position on the role of epigenetics of embryonic and pluripotent stem cells and their differentiated derivatives in conjunction with their potential practical application.

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ESPS Peer-review Report
Name of Journal: World Journal of Stem Cells
ESPS Manuscript NO: 2160
Title: Epigenetics and chromatin plasticity in embryonic stem cells
Reviewer code: 02446077
Science editor: Zhai, Huan-Huan
Date sent for review: 2013-02-04 19:54
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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[ ] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[ ] Accept
[Y] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
[ ] Grade C (Good)	[ ] Grade C: a great deal of language polishing	[ ] No records	[ ]Rejection
[ ] Grade D (Fair)	[ ] Grade D: rejected	BPG Search:	[Y] Minor revision
[ ] Grade E (Poor)		[ ] Existed	[ ] Major revision
		[ ] No records	

COMMENTS TO AUTHORS

Although so many reviews on epigenetics of ES cells have already been published in the field, I have been enjoyed reading this one. A number of features make the review significant and useful-- First the scope of the epigenetics on ESC are broadly cover major aspects that gives a bird's-eye view. It gives some lay-description to invite broader readers, yet it is up-to-date to include major progress. The biophysical interpretation is good and clear. I have only a few suggestions below regarding clarity, organization, and incompleteness. 1. P7. "PcG bodies, … located in the nuclear interchromatin compartment, were present not as distinct nuclear bodies but as nuclear domains that are enriched in separated heterochromatin regions." The interchromatin compartment in not clear since interchromatin is not compartmentalized. 2. P7. "Lifestyle or civilization diseases are now considered…." civilization diseases is vague and inappropriately used. 3. P8. "Typical examples of activating modifications are DNA hypomethylation, acetylation of H3 and H4, and methylation of H3K4, H3K36, and H3K79." This statement is not factual e.x. H3K4. 4. The DNA methylation has progress a great deal regarding ESC. This part of review is out of date. 5. P9. "HDACs, such as HDAC1, HDAC2, and HDAC3, are present in four distinct multiprotein complexes including NuRD." Not clear. Is NuRD part of the HDAC…? The category of the NuRD is not describe well throughout P8-P9. 6. P9. "In particular, H3K4 demethylation seems to be fundamental for inactivation of enhancer function during the differentiation of mESCs." 7. P9. Use more specific term for "DNA lesion". 8. "In addition to DNA methylation, the Oct4 promoter is H3K9 methylated by the methyltransferase G9a" This sentence is not correctly stated regard "is H3K9 methylated". 9. P12, "The amount of chromatin in a condensed state is significantly lower in pluripotent ESCs than after differentiation, which is characterized by pronounced chromatin condensation." Is the

chromatin actually lower? Or change conformation relevant to the condensation…?