**Reviewer’s report**

**Title:** Odontoblast-like differentiation and mineral formation of pulpsphere derived cells on human root canal dentin in vitro

**Version:** 0  **Date:** 03 Oct 2017

**Reviewer:** Michelle Ommerborn

**Reviewer's report:**

Reviewer comments

Title: Odontoblast-like differentiation and mineral formation of pulpsphere derived cells on human root canal dentin in vitro.

This paper describes an experimental study which aimed to evaluate the potential suitability of dental pulp cell (DPC) spheres that were applied to human root canal samples for physiological tissue-like regeneration of the dental root canal by odontoblastic differentiation as well as cell-induced mineral formation.

The study is well designed and the manuscript has been thoroughly written. The author's concisely describe the applied methods and the obtained results are precisely presented. In the discussion section, the author's critically deal with their own findings in the context of the currently available literature. The topic is of much interest for the reader of Head and Face Medicine and it provides very promising perspectives which are of interest for both the researcher as well as for the dental clinician.

There are only minor essential revisions that need to be addressed.

**General comment**

1) Some references in the manuscript show the first author and 'et al'., and the year of publication. Please, adapt them according to the citation style of Head and Face Med. For instance, page 4, row 98 or 107.
Methods
- Page 5, row 117: In this investigation, root canals of incisors, premolars, and molars were used. As the root canal anatomy, in particular, that of molars might appear rather sophisticated, is it advisable to apply specimens derived from different tooth groups?
- Page 5, row 119: In this investigation, authors understandably applied sodium chlorid 0.9 % as irrigant. As nowadays diverse irrigants are used during the root canal treatment, it might be beneficial for the clinically-oriented reader of Head and Face Medicine whether authors would briefly reflect their respective effects in the discussion section.
- Page 5, row 129: Concerning the collection of the DPCs, please report a little more in detail.
- Page 5, row 135: Are there specific reasons, why a population included 100,000 cells? Please, provide an explanation.

Discussion
- Page 12, row 314: Authors wrote: In the clinic, the spheres would be applied directly into the prepared and disinfected root canal.
As mentioned in the Methods section, in this respect, please review briefly the effects of common irrigating solutions, in particular, those of sodium hypochloride on DPCs.

References

Tables
Figures

- . / .

Level of interest
Please indicate how interesting you found the manuscript:
An article of importance in its field

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Please complete a declaration of competing interests, considering the following questions:

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