Peer-review Report
Short Notes applies an anonymous, free-of-charge peer-review process conducted by experts in the relevant field. After acceptance, reviewers' reports, authors' responses and revisions, and the editorial decision are published, and reviewers may choose to disclose their identity.

Peer-reviewers:

- Reviewer 1 : choose not to disclose their identity
- Reviewer 2 : choose not to disclose their identity

Executive Editor: Marc Le Bert, FC3R

Course of the Short Note sn20260212-12r

Short Note submitted on: December 17, 2025

Editorial response: January 28, 2026

Subject: Short Note 12 - **Minor** revision requested after peer review

Dear Alice Jouneau,

I'm pleased to inform you that, following peer review, your Short Note entitled "Commercially available synthetic hydrogels cannot replace Matrigel in promoting polarization and lumenogenesis of 3D ESC aggregates", requires **minor revisions before final acceptance.**

Please carefully address the reviewers' comments point by point and resubmit your revised manuscript through your submission space:

You must submit a revised version of your manuscript together with updated point-by-point responses to the reviewers and the editor in the review tracking space. The manuscript will go back to draft until all requests are fully addressed. This process may involve several back-and-forth steps between you and the editor until a final validated version is obtained. Once validated, the manuscript will proceed to publication.

When responding in the interface, please explain how each comment has been addressed in the Short Note. To help locate the change, indicate either the relevant line number or the beginning of the original text passage (or the figure/table legend, if

applicable). If you disagree with a comment, please provide a brief justification.

We thank you for your collaboration and look forward to your revised submission.

Sincerely,
Marc Le Bert
Short Notes Editorial Team

Editor comments:

Some of the selected keywords are already included in the title or abstract of the Short Note that are searchable by search engines like Google. Please provide new keywords that better describe the work or improve its discoverability in search engines.

Peer-review:

QUALITY OF WRITING _____
Reviewer 1 ticked : yes

Reviewer 2 ticked : yes

QUALITY OF FIGURES AND ADDITIONAL DOCUMENTS _____
Reviewer 1 ticked : yes

Reviewer 2 ticked : yes
Reviewer 2 comment :
Figure 1D would benefit from an explicit label on the y-axis (e.g. percentage of aggregates), to improve clarity and readability. In Figure 1E, individual data points are difficult to distinguish due to overlap, making it hard to visually assess the number of observations per condition. A representation improving point visibility would improve clarity.

QUALITY OF THE EXPERIMENTAL DESIGN _____
Reviewer 1 ticked : yes

Reviewer 2 ticked : yes

QUALITY OF THE REPORTING _____
Reviewer 1 ticked : yes

Reviewer 2 ticked : yes

FINAL REVIEWERS DECISIONS

Reviewer 1 final decision : yes

Reviewer 1 final comment :

This note addresses the critical issue of replacing Matrigel as a matrix for 3D stem cell growth and differentiation. As the origin of this matrix is ethically problematic, the experiments conducted here to test new, more acceptable hydrogels represent a step forward in the search for possible replacement matrices. And even if this work shows that it is not so easy to find matrices as effective as Matrigel for the formation of stem cell rosettes, it also demonstrate that serum-free culture medium formulations may have an advantage for stem cell growth.

I would recommend proofreading the text (a few typos) and checking the English before publication.

Reviewer 2 final decision : yes

Reviewer 2 final comment :

This Short Note is well aligned with the objectives and philosophy of the FC3R Short Notes. It addresses an important methodological question related to the replacement of animal-derived matrices and provides well-documented results that are valuable to the community. The experimental design is robust, appropriate controls are included, and the conclusions are proportionate to the data and not over-interpreted.
The manuscript is generally clear and easy to follow, including for non-specialists in the field. Minor issues related to figure clarity (e.g. axis labelling and visualization of individual data points) should be addressed to further improve readability and transparency, but these do not affect the scientific soundness of the work. Overall, this Short Note represents a solid and useful contribution that meets the FC3R evaluation criteria.

Author's response: February 10, 2026

We thank the editor and reviewers for their careful examination of the manuscript.
Response to editor comment:
The previous keywords have been changed for : polarization - lumenogenesis - basement membrane

Response to Reviewer 1:
The text has been proofread to correct for typos and english has been improved

Response to Reviewer 2:
Figure 1D: a y axis (% of aggregates) has been added.
In figure 1E and F, dot plots will all points more clearly visible have been overimposed on box plots.

Revised version of the Short Note submitted on: February 10, 2026

Final editorial response: February 12, 2026

Acceptance after peer review and editorial checking

Subject: Short Note 12 - Accepted for publication

Dear Dr. Jouneau,

We are pleased to inform you that your Short Note 12, entitled "Commercially available synthetic hydrogels cannot replace Matrigel in promoting polarization and lumenogenesis of 3D ESC aggregates", has been accepted for publication.

Congratulations and thank you for carefully addressing the reviewers' and editorial requests, and for your commitment to sharing previously unpublished results. This contributes to greater clarity, accessibility, and transparency, thereby strengthening the robustness of science.

The reviewers expressed positive feedback on the clarity and 3R impact of the Short Note.

Your Short Note will first be deposited in HAL and assigned a DOI. It will then be made available also on the Short Notes platform, together with the peer-review document annexed to the publication. You will be notified at the end of this process and provided with the corresponding links.

With best regards,
Marc Le Bert
Short Notes Editorial Team

Find below the second reviews from the reviewers and the decision of the editorial board

QUALITY OF WRITING _____
QUALITY OF FIGURES AND ADDITIONAL DOCUMENTS _____
QUALITY OF THE EXPERIMENTAL DESIGN _____

QUALITY OF THE REPORTING _____
FINAL REVIEWERS DECISIONS _____

Final validation and publication: February 12, 2026