Peer Review Report

Review Report on Advancements in Single-Cell RNA Sequencing and Spatial Transcriptomics: Transforming Biomedical Research
Review, Acta Biochim. Pol.

EVALUATION

Q 1 Please summarize the main theme of the review.

The manuscript is a review article discussing single-cell RNA sequencing and spatial transcriptomics. This is an imprtant topic and the discussed methods are rapidly developing once, thus, a review in this field might be a nice contribution to the field.

Q 2 Please highlight the limitations and strengths.

The strenghts of the paper are: (i) important topic, (ii) well organization of the paper, (iii) quite clear presentation. The limitations are: (i) a big diffrerence between the length of description and levels of presenting details regaring both discussed methods, single-cell RNA sequencig (which is presented in details) and spatial transcriptomics (which is presented scarcely), (ii) quality and clarity of the illustative material (figures and tables) are poor and need to be improved.

Q 3 Does the review include a balanced, comprehensive and critical view of the research area?

Generally the paper is quite well-organized, but there is an imbalance between levels of detail of presentation of both discussed methods.

Check List

Q 4 Is the English language of sufficient quality?

Yes.

Q 5 Is the quality of the figure(s) and/or table(s) satisfactory?

No.

Q 6 Does this manuscript refer only to published data? (unpublished or original data is not allowed for this article type)

Yes.

Q 7 Does the manuscript cover the topic in an objective and analytical manner

Yes.

Q 8 Does the reference list cover the relevant literature adequately and in an unbiased manner?

No.

Q 9 Does the manuscript include recent developments?

Yes.

Q 10 Does the review add new insights to the scholarly literature with respect to previously published reviews?

Yes.

Q 11 Please provide your detailed review report to the editor and authors (including any comments on the Check List)

The manuscript is a review article discussing single-cell RNA sequencing and spatial transcriptomics. This is an imprtant topic and the discussed methods are rapidly developing once, thus, a review in this field might be a nice contribution to the field.
There are significant strenghts of the paper. They include (i) the importance of the topic, (ii) the good organization of the paper, and (iii) clarity of the presentation in the text. However, there are also limitations which should be improved before the manuscript can be accepted. They are summarized below:

1. There is a big diffrerence between the length of description and levels of details of single-cell RNA sequencig (which is presented in detail) and spatial transcriptomics (which is presented scarcely). Thus, description and discussion of the latter technique should be more robust.

2. Quality and clarity of the illustative material (figures and tables) are poor and need improvement. Speficially:
(a) Figure 1 contains poorly visible symbols, some due to poor selection of colors (for example, "Cell D" in the central part of the figure is almost invisible).
(b) Figure 1 would benefit from replacing sentences (like: "It shows cell to cell heterogenity") with statements (like: "Assessment of cell-to-cell heterogenity"). This applies to both parts of the figure.
(c) Tables are devoid of numbers and captions. These are mandatory in each scientific article and must be provided.
(d) Organization of Table 1 is poor. For example, what do particular numbers mean in Table 1? What do descriptions mean in the same table? This table requires significant reorganization to be readible and useful.

QUALITY ASSESSMENT

Q 12 Quality of generalization and summary

Q 13 Significance to the field

Q 14 Interest to a general audience