Peer Review File

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Reviewer A
Application in general and visceral surgery. I suggest accepted.

Reply: We express sincere gratitude to Reviewer A's efforts devoted to improve the quality of our manuscript, thank him for his approval and affirmation of the article.

Reviewer B
The assembly of biological materials, including tissues, organs, and cells with 3D bioprinting technology is a major technological advancement with applications in a number of biomedical fields. Through analysis of current literature, this narrative review introduces major concepts and developments in 3D bioprinter applications.

Overall, this is a well-written article and concisely reviews relevant information about the current state of 3D bioprinter and its potential use in several fields, including oncology and dermatology. However, despite being a complete survey of literature the article suffers from a lack of specific examples, and the overall information provided would benefit from an expanded description for multiple specific applications. These concerns in addition to the following issues should be addressed before this manuscript is suitable for publication:

1. Expanded description of multiple specific oncology applications, for example, mimicking the native tumor microenvironment, fabricating blood vessel as well as other vascular tissues and generating 3D cancer models.
2. The article alludes to CRISPR-mediated gene manipulation, this methodology should also be better described and integrated into multiple areas of cell-based 3D bioprining.
3. More technical detail should be discussed for the methodologies that enable assembly of soft hydrogels such as alginate, collagen and fibrin, and include discussion of advances such as Freeform Reversible Embedding of Suspended Hydrogels (FRESH) and expert guided optimization (EGO)

Comment 1: Expanded description of multiple specific oncology applications, for example, mimicking the native tumor microenvironment, fabricating blood vessel as well as other vascular tissues and generating 3D cancer models.
Reply 1: We thank the reviewer for this rigorous comment. In our revision, we have expanded description of mimicking the native tumor microenvironment, generating 3D cancer models.
Changes in the text: We have expanded the sentence in the revision on P12, line224-269, the extended content has been marked in red in the text.

Comment 2: The article alludes to CRISPR-mediated gene manipulation, this methodology should also be better described and integrated into multiple areas of cell-based 3D bioprinting.

Reply 2: We thank the reviewer for this rigorous comment. In our revision, we have expanded description of CRISPR technology and its application cases in cell-based 3D bioprinting.

Changes in the text: We have expanded the sentence in the revision on P17, line340-345 and P18, line359-374, the extended content has been marked in red in the text.

Comment 3: More technical detail should be discussed for the methodologies that enable assembly of soft hydrogels such as alginate, collagen and fibrin, and include discussion of advances such as Freeform Reversible Embedding of Suspended Hydrogels (FRESH) and expert guided optimization (EGO)

Reply 3: We thank the reviewer for this rigorous comment. In our revision, we have described the assembly methods for materials, in addition, we have emphatically described inkjet-based bioprinting and Freeform Reversible Embedding of Suspended Hydrogels (FRESH).

Changes in the text: We have expanded the sentence in the revision on P5, line81-123, the extended content has been marked in red in the text.