The emergence of AI tools in scientific writing and research

Zhidao Xia[1,*], *Qian Wang*[2,*]

Biomaterials Translational is now in its third year since its establishment. On March 19, the first virtual forums in 2023 on 'Advanced Technology for Biomaterial Research' hosted by *Biomaterials Translational* received a great response. The forum covered topics including angiogenesis of biomaterials presented by Professor Jake Barralet, McGill University, Canada, and a new lasermicrotome technology from Dr. Heiko Rechter, LLS ROWIAK LaserLabSolutions, Germany. Lasermicrotome and its related platform are expected to have wide applications for histology, pathology, and tissue/biomaterial interfaces, as shown in the cover art. The online forum was jointly supported by the Welsh Government to celebrate the successful collaboration between McGill University (Canada) and Swansea University (UK), and over 3100 people attended the online forum through virtual broadcast platforms.

In this issue, we present a collection of papers from different fields of translational biomaterials research. There are two review articles: the first, by Xingming Li and co-authors,[1] discusses bioactive peptides for anticancer therapies; the second, by Feihu Zhao's team,[2] explores how the combination of *in vitro* and *in silico* approaches can greatly facilitate the optimization of the micro-mechanical environment for cartilage tissue engineering. Additionally, this issue presents three original research articles, including a report on the development of mechanically conditioned cell sheets cultured on thermo-responsive surfaces for bone tissue engineering applications,[3] a comprehensive investigation on the application of porcine-derived collagen membranes for guided bone regeneration,[4] and a systematic study on how irradiation sterilization impacts the structure and antibacterial performance of antimicrobial peptides.[5]

The first quarter of 2023 has marked a significant milestone in the world of artificial intelligence (AI) with the announcement of ChatGPT4 and GoogleBard. Despite being in its infancy, ChatGPT4 has already made a considerable impact on the future of scientific publications. Many users have utilized ChatGPT to write essays, articles, emails, and other documents for publication. However, there are polarized views on the use of AI in scientific writing.

ChatGPT asserts that while it can generate text for scientific writing, its impact on scientific journals will depend on how researchers, editors, and publishers use it. One potential use of ChatGPT is to generate initial drafts of scientific papers, which could potentially save time and effort in the writing process. However, it is crucial to note that ChatGPT is not a substitute for human expertise and judgment, which are essential for scientific writing.

For Biomaterials Translational, where authors can use AI and AI-assisted technologies in the writing process, we request that authors:

- Only apply AI tools to improve the readability and language of their manuscript
- Always use AI tools with careful oversight
- Avoid using AI technologies to perform data interpretation
- Be mindful that AI technologies very often generate authoritative conclusions that can be biased or even incorrect
- Remember that AI technologies cannot be listed as a co-author

More importantly, as editors, we assure you that our journal is not and will not be controlled or edited by AI!

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1 Institute of Life Science, Swansea University Medical School, Swansea, UK;
2 Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, USA

***Corresponding author:**
Zhidao Xia, z.xia@swansea.ac.uk;
Qian Wang, Wang263@mailbox.sc.edu.

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1. Zhang, Y.; Wang, C.; Zhang, W.; Li X. Bioactive peptides for anticancer therapies. *Biomater Transl.* **2023**, *4*, 5-17.
2. Jess, R.; Ling, T.; Xiong, Y.; Wright, C. J.; Zhao, F. Mechanical environment for in vitro cartilage tissue engineering assisted by in silico models. *Biomater Transl.* **2023**, *4*, 18-26.
3. Wang, G.; Yuan, Z.; Yu, L.; Yu, Y.; Zhou, P.; Chu, G.; Wang, H.; Guo, Q.; Zhu, C.; Han, F.; Chen, S.; Li, B. Mechanically conditioned cell sheets cultured on thermo-responsive surfaces promote bone regeneration. *Biomater Transl.* **2023**, *4*, 27-40.
4. Tai, A.; Landao-Bassonga, E.; Chen, Z.; Tran, M.; Allan, B.; Ruan, R.; Calder, D.; Goonewardene, M.; Ngo, H.; Zheng, M. H. Systematic evaluation of three porcine-derived collagen membranes for guided bone regeneration. *Biomater Transl.* **2023**, *4*, 41-50.
5. Wang, X.; Li, Q.; Yang, H. Effect of radiation sterilisation on the structure and antibacterial properties of antimicrobial peptides. *Biomater Transl.* **2023**, *4*, 51-61.