Multi-level insights into the immuno-oncology-microbiome axis: from biotechnology to novel therapies

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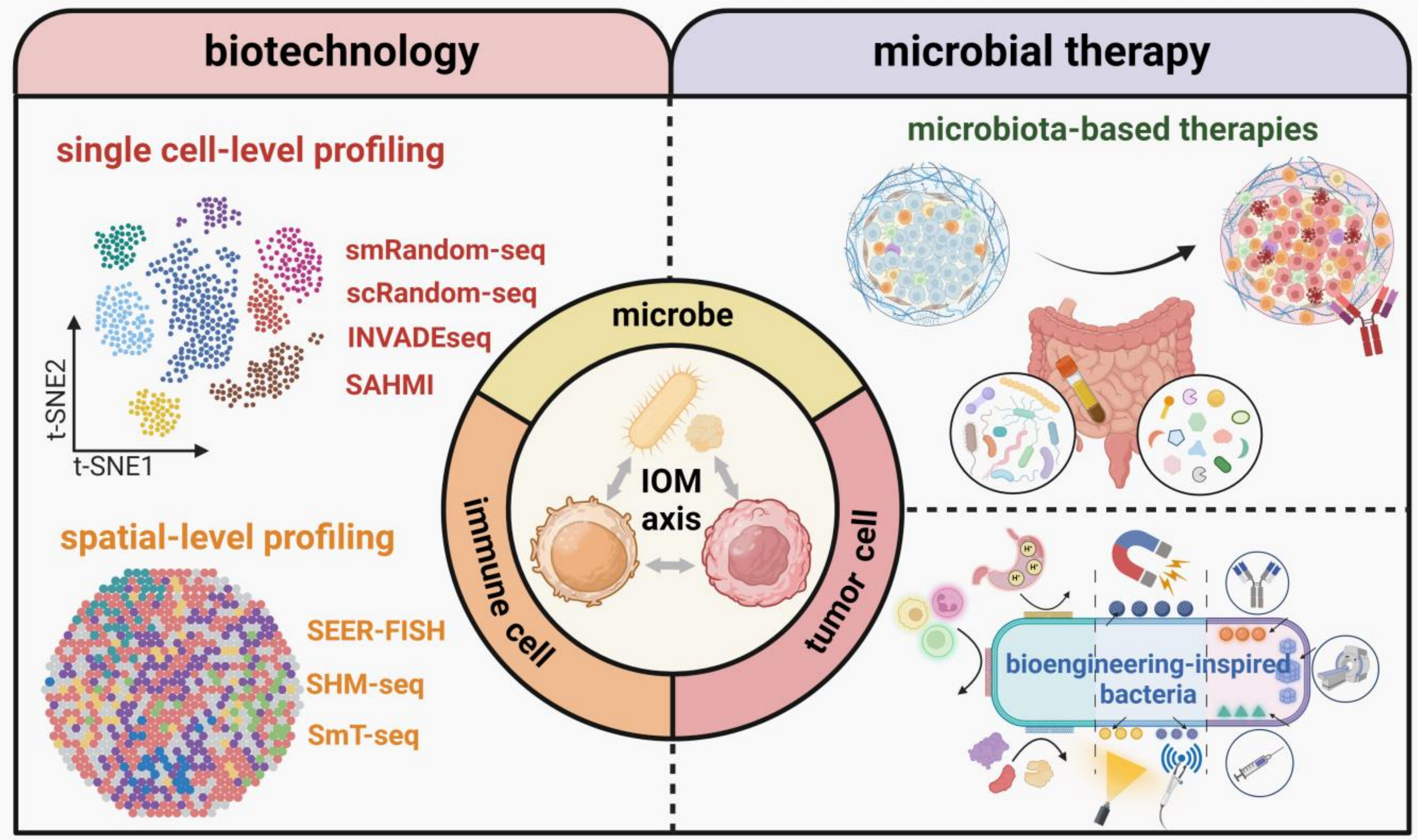
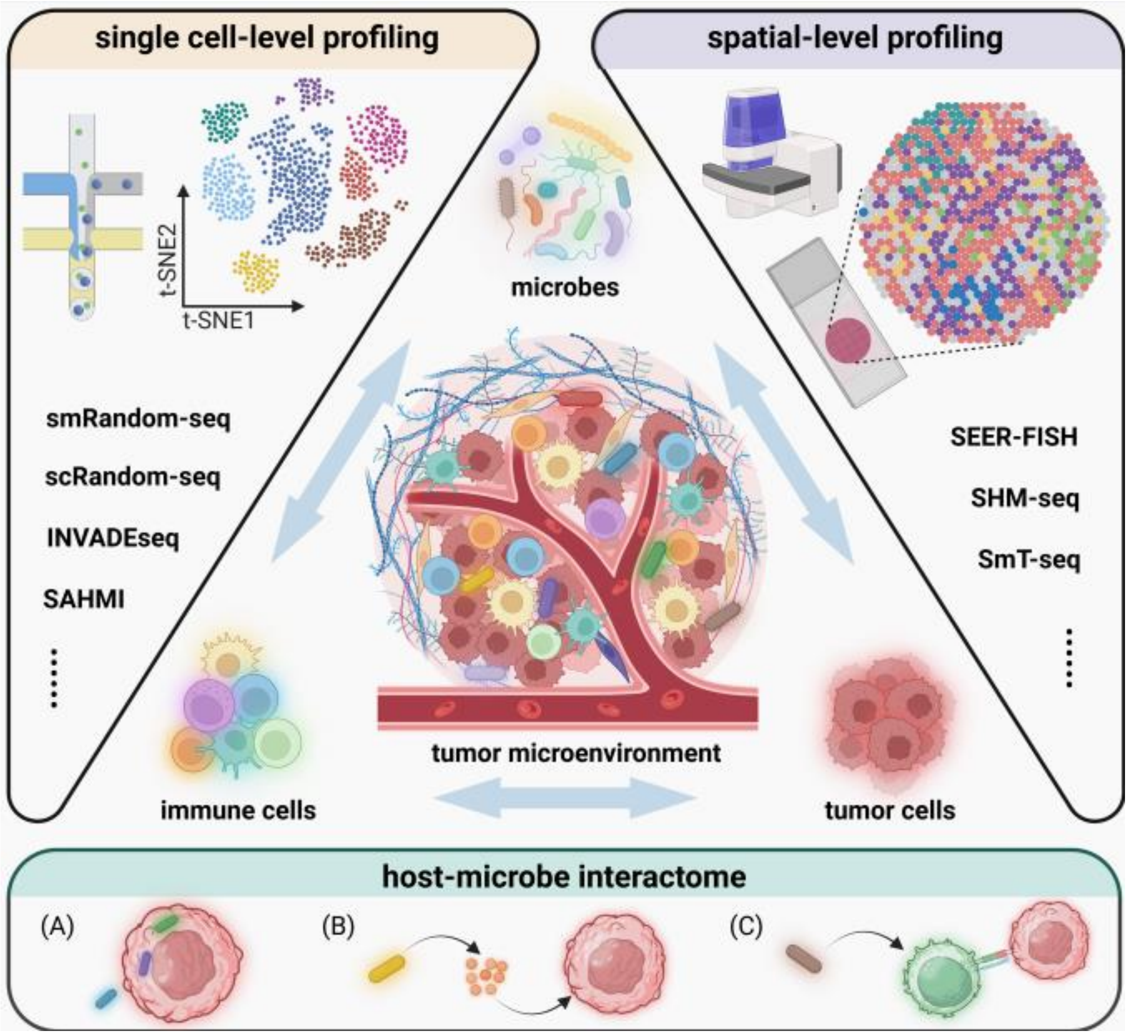
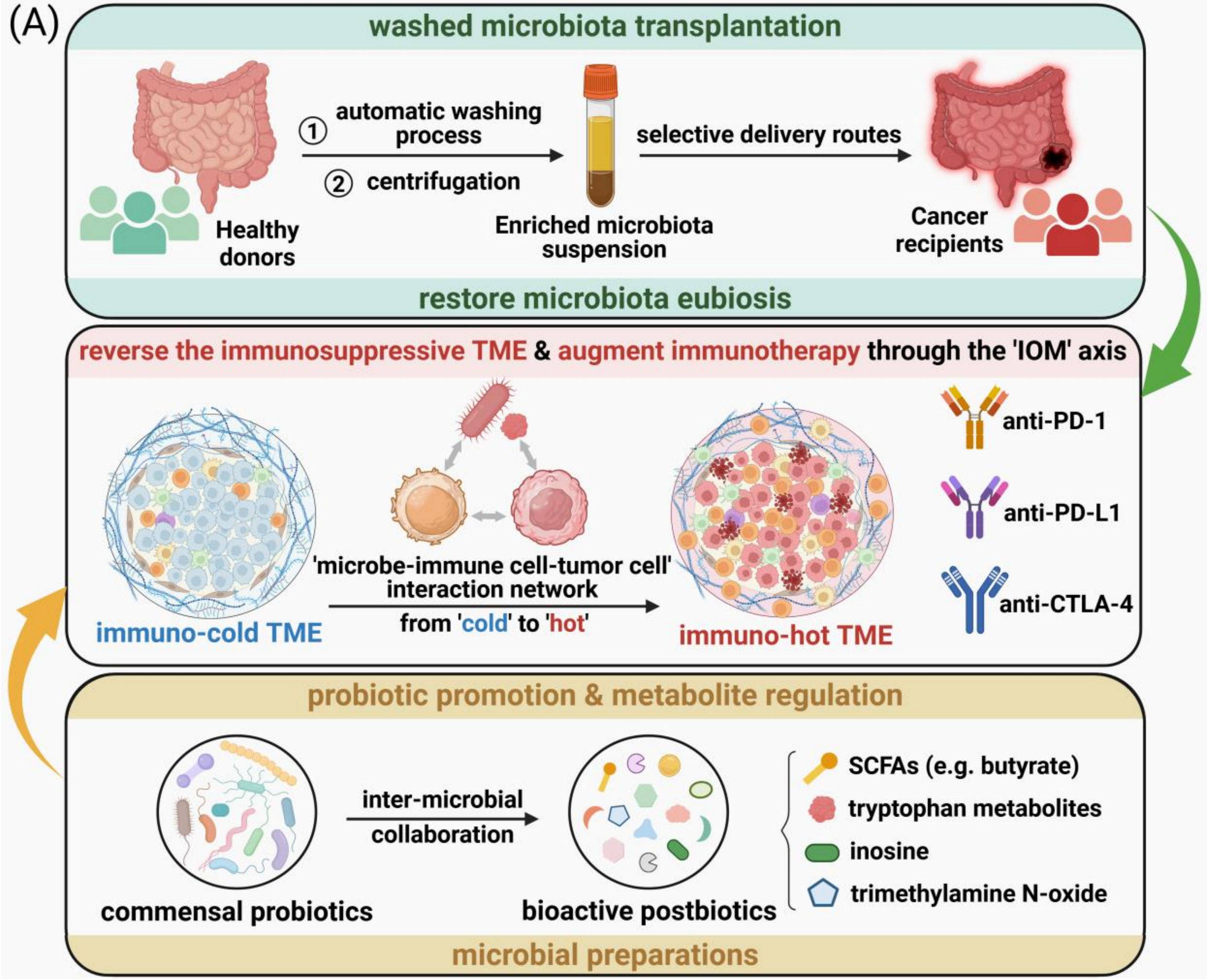
Introduction



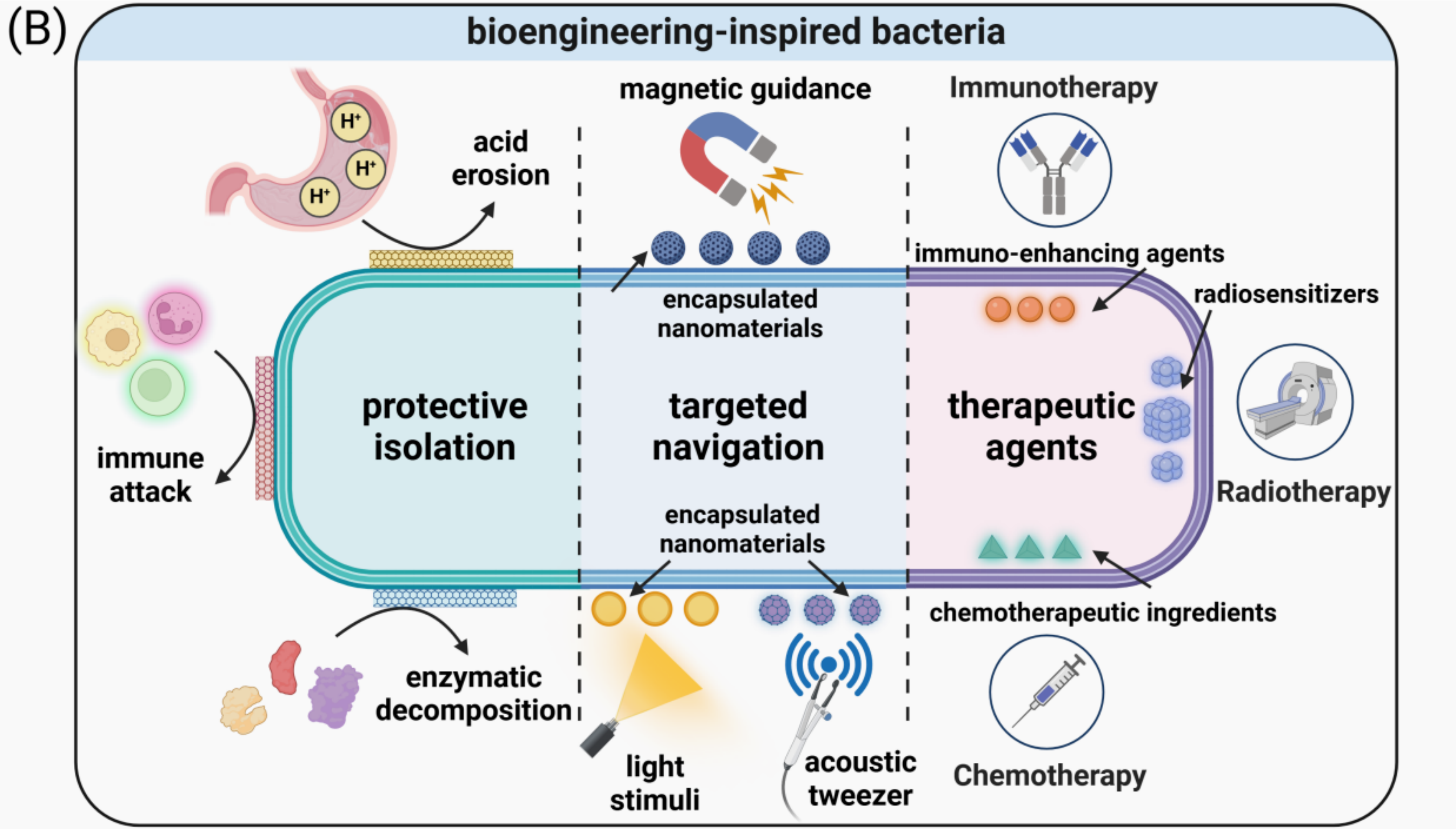
Single-cell and spatial profiling approaches to decipher the multifaceted host-microbe interactome



Microbiota-based therapy: an unexpected helper for immunotherapy



Engineering microbes for targeted cancer therapy: towards precision oncology



Conclusions and prospects

Outstanding questions:

- What strategies can be implemented to mitigate short-term safety risks associated with microbiota-based therapies?
- What are the potential long-term consequences of microbiota modulation, such as chronic disease transmission?
- How can the reproducibility of microbiota-based interventions be enhanced to ensure consistent outcomes across studies?
- In what ways do specific gut microbial taxa modulate ICI efficacy across cancer types? Is it drug-specific or tumor-specific?
- How can microbiota-based therapies be effectively integrated into clinical practice and harmonized with existing therapies?

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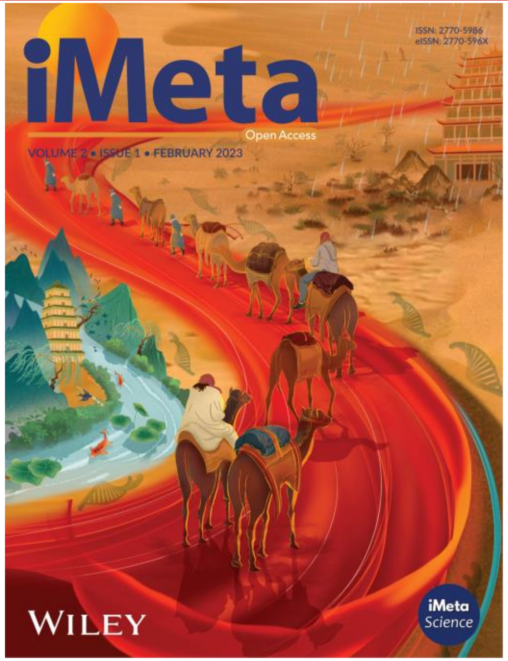

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