



## **Towards 3R (Replacement, Reduction, Refinement) Approaches: Bioengineering Tools and Technologies as Advanced Alternatives to Animal Testing**

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### **Message from the Guest Editors**

The current Special Issue wants to highlight new and advanced bioengineering tools and technologies for developing better and more predictive alternative methods, whose integrated application could lead to a drastic reduction of animal use in the whole field of biomedical research, from basic research and tissue engineering studies to drug testing and toxicological screening.

- 3D in vitro models of cells/tissues/organs;
- Biomimetic bioreactors, microfluidics, and organ-on-chips;
- Sensors and monitoring devices for 3D in vitro cultures;
- Test bench technologies;
- In silico approaches.





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