

## **The use of mathematical modelling for improving the tissue engineering of organs and stem cell therapy**

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### **Abstract**

© 2016 Bentham Science Publishers. Regenerative medicine is a multidisciplinary field where continued progress relies on the incorporation of a diverse set of technologies from a wide range of disciplines within medicine, science and engineering. This review describes how one such technique, mathematical modelling, can be utilised to improve the tissue engineering of organs and stem cell therapy. Several case studies, taken from research carried out by our group, ACTREM, demonstrate the utility of mechanistic mathematical models to help aid the design and optimisation of protocols in regenerative medicine.

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### **Keywords**

Computational modelling, Mathematical modelling, Regenerative medicine, Stem cell therapy, Stem cells, Tissue engineering