Tissue Engineering and Regeneration

Subseries of Reference Series in Biomedical Engineering

Series Ed.: H. Redl

This series Tissue Engineering and Regeneration consists of comprehensive reference texts encompassing the biological basis of tissue regeneration, basic principles of tissue engineering and the current state-of-the-art in tissue engineering of specific tissues and organs. Each volume combines established fundamentals and the latest developments, thus forming an invaluable collection for both experienced researchers as well as practitioners from other areas of expertise. The spectrum of topics ranges from the use of cells for tissue regeneration and tissue engineering, growth factors and biological molecules affecting tissue development and regeneration, to the specific roles of biophysical factors in tissue development and regeneration.

Tissue engineering lies at the crossroads of medicine, life sciences and engineering. The field has developed extensively over the last two decades, addressing the requirements of tissue and organ replacement as well as regeneration in a variety of congenital, traumatic, disease and aging-related conditions, including some of the most critical unmet challenges in modern medicine. Both our increased understanding of the biological basis of tissue engineering as well as significant technological advances mean that engineering design principles can now be used for the de novo construction of functional tissue replacements that meet the requirements of research and clinical applications.

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