



GENE EDITED PIGS

Redefining the Future of Organ Transplantation

Gene Edited Pigs – Redefining the Future of Organ Transplantation presents a comprehensive and forward-looking exploration of pigs as one of the most versatile and translationally relevant biomedical models of the 21st century. Drawing upon advances in gene editing, xenotransplantation, and systems biology, the book systematically examines the anatomical, physiological, immunological, and molecular parallels between pigs and humans that underpin their growing importance in regenerative medicine and organ transplantation. The chapters traverse a wide scientific spectrum - from porcine xenografts, disease modeling, pharmacology, and toxicology to reproductive biotechnology, microbiome research, neuroscience, and biopharmaceutical production. The volume also contextualizes global scientific progress with a focused discussion on the requirements and strategic imperatives for augmenting pigs as experimental systems in India. Designed as a definitive reference, the book integrates fundamental science with applied perspectives, making it equally valuable to researchers, clinicians, regulators, and advanced students engaged in translational biomedical research.

ISBN: 978-93-48542-43-4
e-ISBN: 978-93-48542-51-9
Pages: 248
2026

 **Printed Copy**
Paperback ₹ 795/-

Key Features of the Book

- **Holistic scientific coverage:** Integrates xenotransplantation, regenerative medicine, immunology, microbiome science, neuroscience, and device safety using porcine systems as a unifying model.
- **Strong translational focus:** Highlights gene editing-enabled solutions to immunological rejection, disease transmission, and functional compatibility in organ transplantation.
- **Relevance to policy and capacity building:** Addresses infrastructural, regulatory, and scientific requirements for strengthening pig-based biomedical research in India.
- **Authoritative reference resource:** Structured chapters, extensive references, and an index make it suitable for academia, research institutions, and regulatory bodies.

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