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Autore	Kojima Hajime
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Nota di contenuto	1. Zebrafish, Danio rerio as a replacement alternative model useful in CKDu experiments -- 2. Testing Method Development and Validation for In Vitro Skin Irritation Testing (SIT) by Using Reconstructed Human Epidermis (RhE) Skin Equivalent - EPiTTR -- 3. Development the technique for the Preparation and Characterization of Reconstructed Human Epidermis (RHE) -- 4. Alternative Research (3Rs) in the World, Asia and Japan -- 5. Approaches to Reducing Animal Use for Acute Toxicity Testing: Retrospective Analyses of Pesticide Data -- 6. Progress in deleting the 1-year dog study for the safety assessment of pesticides -- 7. Cosmetic regulation and alternatives to animal experimentation in India -- 8. Guidance on the Use of Alternative Test Methods for the Safety Assessment of Cosmetics and Quasi-Drugs -- 9. Alternatives and Refinement for Animal Experimentation in Cancer Research -- 10. 3Rs in quality control of human vaccines: opportunities and barriers -- 11. The Use of Adverse Outcome Pathways (AOPs) to Support Chemical Safety Decisions within the Context of Integrated Approaches to Testing and Assessment (IATA) -- 12. Mechanism-based evaluation system for hepato- and nephrotoxicity or carcinogenicity using omics technology -- 13. Alternative methods for developmental toxicity testing using mouse ESCs -- 14. Futuristic approach to alternative model organisms: Hydra stakes its claim -- 15.

Sommario/riassunto

This open access book presents recent advances in the pure sciences that are of significance in the quest for alternatives to the use of animals in research and describes a variety of practical applications of the three key guiding principles for the more ethical use of animals in experiments – replacement, reduction, and refinement, collectively known as the 3Rs. Important examples from across the world of implementation of the 3Rs in the testing of cosmetics, chemicals, pesticides, and biologics, including vaccines, are described, with additional information on relevant regulations. The coverage also encompasses emerging approaches to alternative tests and the 3Rs. The book is based on the most informative contributions delivered at the Asian Congress 2016 on Alternatives and Animal Use in the Life Sciences. It will be of value for those working in R&D, for graduate students, and for educators in various fields, including the pharmaceutical and cosmetic sciences, pharmacology, toxicology, and animal welfare. The free, open access distribution of Alternatives to Animal Testing is enabled by the Creative Commons Attribution license in International version 4: CC BY 4.0.