

Modulation of Cellular Responses in Toxicity

Edited by

Corrado L. Galli

Marina Marinovich

Istituto di Scienze Farmacologiche
Via G. Balzaretti 9
I-20133 Milano, Italy

Alan M. Goldberg

Center for Alternatives to Animal Testing
Johns Hopkins School of Public Health
111 Market Place, Suite 840
Baltimore, MD 21202-6709, USA



Springer

Published in cooperation with NATO Scientific Affairs Division

Table of Contents

Modern Methods in Toxicology

Modulation of Cellular Responses in Toxicity A. M. Goldberg	1
Molecular Biology Approaches to Cell Toxicology G. G. Gibson	11
Receptor Mediated Toxicity: the Dioxin Receptor as an Example of Biological Complexity and Experimental Approaches T. R. Sutter, C. W. Cody, J. A. Gastel, C. L. Hayes, Y. Li, N. J. Walker, H. Yin	21
Perspectives on the Use of Structure-Activity Expert Systems in Toxicology H.S. Rosenkranz, G. Klopman	37
Structural Features Contributing to Biodegradability H. S. Rosenkranz, Y. P. Zhang, G. Klopman	91
Pharmacokinetic Considerations in the Toxicologic Evaluation of Xenobiotics R. K. Verbeeck	125
Biosensors in Pharmacology and Toxicology <i>in Vitro</i> P. Catroux, M. Cottin, A. Rougier, J. Leclaire	145

Milestones in Cell Toxicology

Networks of Intercellular Communication: Eicosanoids and Cytokines as Mediators of the Response of Skin to Toxicity G. Fürstenberger, K.Müller-Decker	157
The Network of Intracellular Signal Processing as a Main Site of Cellular Responses in Toxicity F. Marks	191
Actin Involvement in Cell Toxicity M. Marinovich, B. Viviani, C. L. Galli	223
Cell Death by Apoptosis: Morphological, Genetic and Biochemical Features and Toxicological Implications G. Palladini, F. Taddei, G. Bellomo	241
Free Radical Mediated Toxicity of Drugs of Abuse P. Mannaioni, M.G. Di Bello, S. Raspanti, L. Mugnai, V. Romano, E. Masini	257

Target Organ Toxicity

Alternatives in Testing for Hepatotoxicity F. Goethals, M.Roberfroid	265
<i>In Vitro</i> Skin Irritation Assays: Relevance to Human Skin S.Patil, J. Harvell, H. I. Maibach	283
<i>In Vitro</i> Responses to Immunotoxicants H. Van Loveren, R.J. Vandebriel	295
Nephrotoxicity G. G. Gibson	303
Neurotoxicity <i>in Vitro</i> - Cultured Neuronal Cell Lines and Electrophysiological Approach H.P.M. Vijverberg, M. Oortgiesen, T. Leinders, R. Zwart	311
<i>In Vitro</i> Toxicology of the Respiratory System R. A. Roth	331