

# Contents

	<b>Foreword</b> . . . . .	IX
<b>1</b>	<b>The Importance of Biological Monitoring</b>	
1.1	The Development and Importance of Biological Monitoring in the DFG and MAK Commission . . . . . <i>Dietrich Henschler</i>	1
<b>2</b>	<b>Internal Exposure and Haemoglobin Adducts</b>	
2.1	Biological Monitoring in Occupational and Environmental Medicine – The Present State of the Art and Future Prospects . . . . . <i>Jürgen Angerer</i>	5
2.2	Metabolic Profiling – A Way of Better Understanding External and Internal Exposure to Organic Substances . . . . . <i>Albert W. Rettenmeier</i>	16
2.3	Biological Monitoring of Arylamines and Nitroarenes . . . . . <i>Gabriele Sabbioni</i>	24

<b>3</b>	<b>DNA Adducts</b>	
3.1	Genetic Cancer Susceptibility and DNA Adducts: Studies in Smokers and Coke Oven Workers . . . . .	35
	<i>Magarita Rojas, Kroum Alexandrov, Helmut Bartsch and Berthold Spiegelhalder</i>	
3.2	The Detection of DNA Adducts in Biological Monitoring . . . . .	46
	<i>Werner K. Lutz and Martin G. Maisch</i>	
3.3	<sup>32</sup> P-Postlabelling HPLC Analysis of DNA Adducts in Breast Tissue . . . . .	57
	<i>Wolfgang Pfau</i>	
3.4	Studies of 8-Hydroxy-2'-Deoxyguanosine: A Biomarker for Oxidative DNA Damage <i>in vivo</i> ? . . .	68
	<i>Boleslaw Marczynski, Jürgen Hölzer and Michael Wilhelm</i>	
<b>4</b>	<b>Susceptibility</b>	
4.1	Improved Methods of Phenotyping and Effect Monitoring for Evaluating the Risk to the Individual, using GSTT1 as an Example . . . .	78
	<i>Ernst Hallier</i>	
4.2	Genetic Polymorphisms of Sulfotransferases as Susceptibility Parameters . . . . .	84
	<i>Hansruedi Glatt</i>	
4.3	Genotyping and Phenotyping, Using NAT2 as an Example . . . . .	96
	<i>Klaus Golka and Meinolf Blaszkewicz</i>	
4.4	New High-throughput Technology in the Diagnostic Screening of Susceptibility Factors .	103
	<i>Ricarda Thier, Thomas Brüning and Yon Ko</i>	

<b>5</b>	<b>Cytogenetic Parameters</b>	
5.1	Biological Monitoring with Cytogenetic Methods . . .	110
	<i>Günter Obe, Helga Fender and Gisela Wolf</i>	
5.2	Examples of the Use of Three-colour Chromosome Painting in Cytogenetic Biomonitoring . . . . .	121
	<i>Erich Gebhart, Irmgard Verdorfer and Susann Neubauer</i>	
5.3	The Comet Assay as a Biological Monitoring Test . . .	130
	<i>Günter Speit, Oliver Merk and Andreas Rothfuß</i>	
<b>6</b>	<b>Immunology</b>	
6.1	Immunoglobulins as Markers of Long-term Exposure to Allergenic Substances . . . . .	140
	<i>Hans Drexler</i>	
6.2	Immunological Effects of Polymorphic Key Enzymes .	146
	<i>Jürgen Lewalter</i>	
<b>7</b>	<b>Epidemiology</b>	
7.1	Evaluation of Exposure in Epidemiological Studies . .	169
	<i>Kurt Ulm</i>	
7.2	Possibilities and Limitations of the Molecular Epidemiology of Workplace Exposures . . . . .	175
	<i>Kurt Straif</i>	
<b>8</b>	<b>Summary</b> . . . . .	191
	<i>Jürgen Angerer and Helmut Greim</i>	
<b>9</b>	<b>Authors</b> . . . . .	199