

Toxicology and Epigenetics

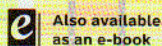
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Epigenetics is the study of both heritable and non-heritable changes in the regulation of gene activity and expression that occur without an alteration in the DNA sequence. This dynamic and rapidly developing discipline is making its impact across the biomedical sciences, in particular in toxicology where epigenetic differences can mean that different individuals respond differently to the same drug or chemical.

Toxicology and Epigenetics reflects the multidimensional character of this emerging area of toxicology, describing cutting-edge molecular technologies to unravel epigenetic changes, the use of *in vivo* and *in vitro* models, as well as the potential use of toxicological epigenetics in regulatory environments. An international team of experts consider the interplay between epigenetics and toxicology in a number of areas, including environmental, nutritional, pharmacological, and computational toxicology, nanomaterials, proteomics and metabolomics, and cancer research. Topics covered include:

- environment, epigenetics and diseases
- DNA methylation and toxicogenomics
- chromatin at the intersection of disease and therapy
- epigenomic actions of environmental arsenicals
- environment, epigenetics and cardiovascular health
- toxicology, epigenetics and autoimmunity
- ocular epigenomics: potential sites of environmental impact in development and disease
- nuclear RNA silencing and related phenomena in animals
- epigenomics – impact for drug safety sciences
- methods of global epigenomic profiling
- transcriptomics: applications in epigenetic toxicology

Toxicology and Epigenetics is an essential insight into the current trends and future directions of research in this rapidly expanding field for investigators, toxicologists, risk assessors and regulators in academia, industry and government.



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