



## Editorial

# Toxicogenomics in future

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### EDITORIAL NOTES

Toxicology is that the science of adverse effects of chemicals, drugs, environmental agents, and stressors. Genetics defines the structure, sequence (code), and performance of the complete deoxyribonucleic acid complement of organisms. The interface of those various disciplines is termed toxicogenomics and is predicated upon the appliance of genomic technologies to outline the changes in organic phenomenon (both mRNA and proteins) as a consequence of exposures. DNA microarray technology permits the coinciding measuring of transcription of thousands of genes exploitation microchips containing thousands of probes of deoxyribonucleic acid (cDNA) immobilized in a very preset array. Pharmacological medicine has classically been seen because of the science of poisons.

### Toxicogenomics in future

Within modern times, however, it's evolved into a composite of connected, however distinct disciplines, that along get to know however chemicals of every kind - each synthetic and natural - affect human health and therefore the surroundings. Toxicologists and surroundings health scientists have studied the results of the environment on human health for several years. Adverse environmental effects are known, and necessary progress has been created in mitigating exposure to harmful agents like X-radiation, UV-light, lead, pesticides, and dioxins. Toxicologic analysis has tried to develop an associate degree economical, cost-efficient, and comprehensive strategy for predicting and preventing deadly responses in humans. The genomic information and technological developments encompassing the human order program have yielded a good gift to toxicogenomic analysis as a result of the road to understanding the genetic and

organic chemistry pathways to malady from environmental toxicants has been considerably widened by this wealth of genetic info. The accelerated discovery of genetic information of each human and inhuman genome has sceptered pharmacological medicine to succeed on the far side its classical boundaries of pathology and clinical chemistry to incorporate all the genes and proteins within the organic chemistry pathways toward the manifestation of malady. Thousands of genes and proteins will be analyzed simultaneously; it's currently doable and sensible to fastidiously map the results of a deadly chemical to operate of dose and time against perturbations in networks of expressed genes and proteins. Pharmacological medicine had "come old-time," which genetics would supply the tools to influence its future. Genetics will not be the only tool used.

Toxicogenomics: a replacement scientific field that elucidates the complete order is concerned in biological responses of organisms exposed to environmental toxicants/stressors. It combines info from studies of genomic-scale mRNA identification, cell-wide or tissue-wide macromolecule identification (proteomics), genetic status, and machine models to know the roles of gene-environment interactions in malady. There is little question that toxicogenomics remains a young field. The very fact is, toxicogenomics has stirred tremendous excitement and interest the globe over, notably among the drug and chemical makers. Though the sector of toxicogenomics is in its early stages and can be a long-run effort, it's already clear that the advantages of this organized and comprehensive approach are each in-depth and exciting. The scope of data derived from this effort accustomed perceive the underlying mechanism of malady by deadly chemicals, also as for drug discovery, and conjointly are an important platform for developing interventional and remedial methods to interrupt the malady method.