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## ■ Preface

Toxicology is the science of the harmful effects of substances and factors on living organisms. The *toxicity* of a substance usually depends on the quantity or concentration of that substance, as well as the duration and frequency of exposure; not all living things are equally sensitive to all toxic substances. Many substances are essential for humans at low doses but may be toxic at higher doses. The famous maxim of *Theophrastus Bombastus von Hohenheim* (1493–1541), known as Paracelsus, that “*Only the dosage makes something a poison or a remedy*,” was undisputed until quite recently. However, this maxim is now being challenged as, for example, in the case of gene-altering substances where only one molecule is thought to suffice, theoretically, to cause a cell to degenerate and thus initiate tumor formation. The same principle may also apply to where a single molecule might be enough to trigger an allergic reaction.

The *Illustrated Handbook of Toxicology* includes a full discussion of threshold and non-threshold toxicology, modern toxicological methods (omics techniques) such as genomics, proteomics and metabolomics, and biological weapons. In addition, the effects of relevant toxicants on the environment and human health are explained and richly illustrated. Additional expert risk assessments provided along with updated (hazardous substance) exposure thresholds for those affected add another important dimension to the utility of the Handbook. These expert assessments are very helpful in providing meaningful context to complex toxicological concepts to the interested reader.

The first part (General Toxicology) provides updated fundamental information on toxicology.

The second part (Special Toxicology) deals with the different groups of harmful and poisonous substances, including the effects of radiation and noise. The full-color toxicological illustrations bring to life various toxicological phenomena. All the chemical formulas are in line with Römpp's Dictionary of Chemistry. This *Illustrated Handbook of Toxicology* is the book of first choice for students of medicine, dentistry, veterinary medicine, pharmacy, biology, chemistry, food chemistry, and other sciences. It is also an invaluable resource for practicing physicians, pharmacists, and scientists. The easy-to-read text, clear tables, and full color illustrations further enhance the utility and accessibility of this handbook to a broad audience.

This *Illustrated Handbook of Toxicology* provides the interested reader with a broad range of topics that will be useful not only for students but also for toxicologists, environmental physicians, political decision-makers and their advisers, whose work is directed toward protection of the environment and human health.

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