### DESCRIPTION

Tailored to the needs of scientists developing drugs, chemicals, cosmetics and other products this one-stop reference for medicinal chemists covers all the latest developments in the field of predictive toxicology and its applications in safety assessment.

With a keen emphasis on novel approaches, the topics have been tackled by selected expert scientists, who are familiar with the theoretical scientific background as well as with the practical application of current methods. Emerging technologies in toxicity assessment are introduced and evaluated in terms of their predictive power, with separate sections on computer predictions and simulation methods, novel in vitro systems including those employing stem cells, toxicogenomics and novel biomarkers. In each case, the most promising methods are discussed and compared to classical in vitro and in vivo toxicology assays. Finally, an outlook section discusses such forward-looking topics as immunotoxicology assessment and novel regulatory requirements.

With its wealth of methodological knowledge and its critical evaluation of modern approaches, this is a valuable guide for toxicologists working in pharmaceutical development, as well as in safety assessment and the regulation of drugs and chemicals.

### ABOUT THE AUTHOR

Friedlieb Pfannkuch graduated as a physician from the Free University of Berlin, Germany and is Professor at the University of Basel, Switzerland. He has more than 27 years of experience in non-clinical safety assessment for all phases of drug development.
During his career he was head of experimental toxicology at Ciba-Geigy in Basel, head of the non-clinical safety section at Yamanouchi Europe in the Netherlands, responsible for non-clinical nutrition safety at Roche Vitamins, and from 2003 until his retirement in 2011 he was a senior scientist in the global non-clinical drug safety department of F. Hoffmann-La Roche in Basel. He has contributed to international pharmaceutical consortia, such as toxicity testing of alternatives to CFCs propellants - IPACT, the ILSI task force on Food Safety in Europe and to working groups of the International Conference on Harmonization - ICH. In the period from 2004-2009 he as the responsible manager of the European Commission's Research Framework Program 6 Project InnoMed: "Predictive Toxicology - PredTox".

Laura Suter-Dick graduated as a biologist from the University of Buenos Aires (Argentina) and subsequently received her PhD from the Free University of Berlin (Germany). She has nearly 20 years of experience within the pharmaceutical industry, mainly in the field of toxicology. During her career in the pharmaceutical industry she worked as a scientist in the reproductive toxicology at Sandoz in Basel. She specialized in molecular toxicology (toxicogenomics) and in vitro assays at F. Hoffmann-La Roche Ltd., where she led the mechanistic toxicology. She has recently been appointed Professor for Molecular Toxicology at the Life Sciences School of the University of Applied Sciences and Arts Northwestern Switzerland. She acts as an external expert in several scientific panels and is also a Board Member of ESTIV (European Society of Toxicology in vitro).