HINRICH GÖHLMANN AND WILLEM TALLOEN

GENE EXPRESSION STUDIES
USING AFFYMETRIX MICROARRAYS
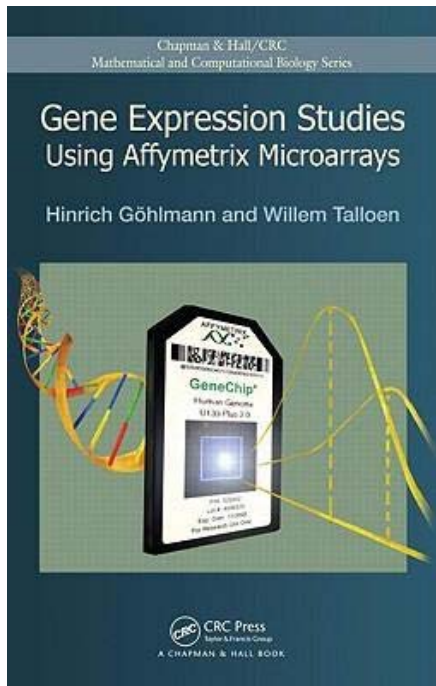
The book is interdisciplinary and bridges the gap between molecular biology, bioinformatics and biostatistics. It describes the gene expression microarray study from design to conclusion. Although focusing on Affymetrix technology, it covers topics that are equally useful for other microarray platforms. The book is actually written as a comprehensive overview of the entire experimental process from start to end. Thus it is informative at different levels of experience. The beginner can use it as an introductory course as well as a practical user guide. The specialized expert can use it as a translation dictionary to understand other involved disciplines or to get a broader picture of microarray gene expression studies in general.

Together with the detailed description of the Affymetrix microarray technology platform the book outlines the crucial role of statistical data analysis of the gene expression data generated. Depending on the characteristics of the data and the goals of the experiment, different analysis techniques have to be chosen. Thus the book also describes the basic statistical methods for data exploration conceptually with illustrative examples. In addition it provides an overview of the typical graphs and visualizations used in microarray analysis.

The book has a separate chapter that provides an overview of the different application areas of gene expression profiling in pharmaceutical research. In fact it demonstrates how widely gene expression profiling is applied throughout the whole drug discovery and development process.

The authors, Hinrich W.H. Göhlmann and Willem Talloen, work at Johnson & Johnson Pharmaceutical Research & Development as Principal Scientist and Senior Statistician, respectively. As such they use the technology and interpret the data generated by the technology on a daily basis. This background provides a solid basis for the comprehensiveness and the practical orientation of the book.

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