

Preface

DNA microarray technology has become a useful technique in gene expression analysis for the development of new diagnostic tools, and for the identification of disease genes and therapeutic targets for human cancers. Appropriate control for DNA microarray experiment and reliable analysis of the array data are the key to performing the assay and utilizing the data correctly. The most difficult challenge has been the lack of a powerful method to analyze the data for all genes (more than 30000) simultaneously and to use the microarray data in a decision-making process.

In this book, we attempt to describe DNA microarray technology and data analysis by pointing out current advantages and disadvantages of the technique and available analytical methods. An important part of the book is that we will include some new ideas and analytical methods based on our own experience in DNA microarray study and analysis. We believe that our new way of interpreting and analyzing the microarray data will bring us closer to success in decision making using the information obtained through DNA microarray technology.