In this book, the authors describe DNA microarray technology and data analysis by pointing out current advantages and disadvantages of the technique and available analytical methods.

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 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 30,000 genes) simultaneously and to use the microarray data in a decision-making process.

Crucially, new ideas and analytical methods based on the authors’ own experience in DNA microarray study and analysis are introduced. It is believed that this new way of interpreting and analyzing microarray data will bring us closer to success in decision-making using the information obtained through the DNA microarray technology.