
Preface

The use of nucleic acid or gene probes as cloning or diagnostic tools has proven to be a powerful technique for mapping, isolation, and manipulation of genes. Their applications range from the identification of genes responsible for inherited human disorders to the rapid detection and identification of bacteria or other microorganisms in microbial communities. For example, oligonucleotide hybridization probes complementing either small ribosomal subunits, large ribosomal subunits, or internal transcribed spacer regions have now been developed for a wide variety of microorganisms. The technique of *in situ* hybridization of labeled DNA has allowed genes to be mapped to single chromosomes and in many cases to a single chromosome band, promoting significant advance in human genome mapping.

Gene Probes: Principles and Protocols presents the principles for gene probe design, labeling, detection, target format, and hybridization conditions together with detailed protocols, accompanied by practical hints and tips from experts. It will be a valuable resource for all those bench scientists—including biochemists, molecular biologists, and microbiologists—both in academia and in industry who are engaged in the search for specific genes in the human chromosome or in detection of microorganisms and their toxins, both in the environment and in food samples, to mention only two examples.

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