

Detection of non-amplified genomic DNA

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Abstrak

This book offers an overview of state-of-the-art in non amplified DNA detection methods and provides chemists, biochemists, biotechnologists and material scientists with an introduction to these methods. In fact all these fields have dedicated resources to the problem of nucleic acid detection, each contributing with their own specific methods and concepts. This book will explain the basic principles of the different non amplified DNA detection methods available, highlighting their respective advantages and limitations. Non-amplified DNA detection can be achieved by adopting different techniques. Such techniques have allowed the commercialization of innovative platforms for DNA detection that are expected to break into the DNA diagnostics market. The enhanced sensitivity required for the detection of non amplified genomic DNA has prompted new strategies that can achieve ultrasensitivity by combining specific materials with specific detection tools. Advanced materials play multiple roles in ultrasensitive detection. Optical and electrochemical detection tools are among the most widely investigated to analyze non amplified nucleic acids. Biosensors based on piezoelectric crystal have been also used to detect unamplified genomic DNA. The main scientific topics related to DNA diagnostics are discussed by an outstanding set of authors with proven experience in this field.