

Artificial DNA

Methods and Applications

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Artificial DNA: Methods and Applications introduces the concept of designing and exploiting artificial DNA in the development of products to achieve almost any intended purpose. The first part of the book covers methods of

oligonucleotide synthesis with examples of various direct applications of synthetic DNA. The second part describes methods of gene assembly from synthetic oligonucleotides and the application of synthetic genes. Additionally, the authors discuss different trends within each application area and future developments.

The contributing authors describe how to engineer proteins by using both rational and semi-rational design strategies to attain desired protein characteristics; and elaborate on various hybridization techniques and amplification reactions for modeling evolution and for use in basic research. Some of the exciting applications of artificial DNA include site-specific mutagenesis, protein engineering, anti-sense technology, DNA vaccines, protein vaccines, recombinant antibodies, screening for genetic and pathogenic diseases, development of materials with new biochemical and structural properties, and many more. With unprecedented coverage of the subject, *Artificial DNA* allows you to understand the strategy, design, and applications of synthetic oligonucleotides.

FEATURES

- Describes methods for oligonucleotide and polynucleotide synthesis
- Teaches the basic principles of designing genes to produce proteins with desired functions
- Covers applications of synthetic DNA in various fields and industries
- Includes historical aspects, comprehensive review, trend analysis, and future developments

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