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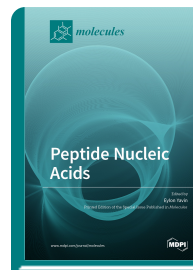
Peptide Nucleic Acids

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This book compiles four review articles and four research papers that highlight recent developments in the field of peptide nucleic acid (PNA) chemistry and biomedicine. The review articles encompass a variety of fields related to PNA, emphasizing the versatility of this DNA mimic. Two excellent reviews detail the use of PNA for molecular diagnostics of miRNAs and genetic point mutations (SNPs). Another review provides a comprehensive analysis of the various approaches for gene editing using chemically modified PNA molecules. Lastly, PNA molecules are elegantly described as effective (antisense) antimicrobial agents in the final review. The high binding affinity of PNA to complementary DNA and RNA is highlighted in three research articles. Two articles show how PNA molecules act as splice modulating and RNA masking molecules, separately. In another contribution, the high affinity and achiral characteristics of PNAs are used to develop a stable L-DNA-based catalytic hairpin assembly. Lastly, chemically-modified PNA molecules are shown to be superior probes for SNP detection. Altogether, these studies illustrate how PNA molecules may be useful for a variety of biomedical applications as either therapeutic or diagnostic agents.



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