

Special Issue

Peptide Nucleic Acids: Applications in Biomedical Sciences

Message from the Guest Editor

Peptide Nucleic Acid (PNA) is a purely synthetic DNA analogue that has been used in the last three decades for a variety of biomedical applications. PNA oligomers have several properties that make them suitable for use in the field of biology/medicine including (1) high stability in biological fluids, and (2) cell permeability by conjugation of PNA to a CPP (cell penetrating peptide), lipid, or ligand, and/or encapsulation into nano/micro particles. As therapeutic molecules, PNAs have been developed as potent and specific antiviral and antimicrobial agents. In addition, they have been used to effect splicing events as a means of treating genetic disorders. Also, modified PNAs (e.g., gamma-PNAs) have been shown to act as potent antigene molecules (targeting dsDNA as well as dsRNA). In the diagnostic field, PNAs have been used to detect a variety of RNA biomarkers in living cells associated with diseases and were also designed to detect single point mutations associated with certain diseases. This Special Issue is intended to provide a platform to report advances and challenges in both the therapeutic and diagnostic fields associated with PNA chemistry.

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Message from the Editor-in-Chief

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