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.

Guest Editor

Dr. Eylon Yavin

The Institute for Drug Research, The School of Pharmacy, The Faculty of Medicine, The Hebrew University of Jerusalem, Hadassah Ein-Kerem, Jerusalem 9112102, Israel

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Molecules
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
molecules@mdpi.com

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Message from the Editor-in-Chief

As the premier open access journal dedicated to experimental organic chemistry, and now in its 25th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts and novel materials. Pushing the boundaries of the discipline, we invite papers on multidisciplinary topics bridging biochemistry, biophysics and materials science, as well as timely reviews and topical issues on cutting edge fields in all these areas.

Editor-in-Chief

Prof. Dr. Thomas J. Schmidt
Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Corrensstrasse 48, D-48149 Münster, Germany

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