

Special Issue

Cyclic Nucleotide Analogues as Biochemical Tools and Prospective Drugs

Message from the Guest Editor

Nucleotides and inositol phosphates are examples of second messengers involved in cellular events, and some analogs of this type are promising enough to be tested as drugs. Other analogs have become standard tools for the investigation of biochemical and physiological signal transduction pathways, like the *Rp*-diastereomers of adenosine and guanosine 3',5'-cyclic monophosphorothioate, as competitive inhibitors of cAMP- and cGMP-dependent protein kinases. Next generation analogs exhibit a higher membrane permeability, increased resistance against degradation, and improved target specificity, or are caged or photoactivatable for fast and/or targeted cellular imaging. Novel specific nucleotide analogs activating or inhibiting cyclic nucleotide-dependent ion channels, EPAC/GEF proteins, and bacterial target molecules have been developed, opening new avenues for basic and applied research. This Special Issue will highlight recent developments in second messenger analog research, as well as comment and elaborate on seminal findings in the field in the form of technical or review papers.

Guest Editor

Prof. Dr. Erik Maronde

Institut für Anatomie II, Dr. Senckenbergische Anatomie, Goethe-Universität Frankfurt, Theodor-Stern-Kai-7, 60590 Frankfurt, Germany

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. José L. Quiles

Department of Physiology, Institute of Nutrition and Food Technology
"Jose Mataix", Biomedical Research Center, University of Granada,
Avda. Conocimiento s/n, 18100 Armilla, Granada, Spain

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