

The bioorganic chemistry of an inorganic clusters: Synthesis and biological testing of nucleosides and nucleic acids bearing boron cluster modulator

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Contemporary technologies take advantage of the knowledge of different fields of science. The crossroads of biology and biological and inorganic chemistry is a field of fruitful interconnections yielding new pharmaceuticals and materials such as biological/nonbiological composites, and new diagnostic methods.

Several general methods for the synthesis of new purine and pyrimidine nucleosides modified with borane clusters and metallacarborane complexes as well as incorporation of borane clusters into nucleic acids will be discussed. Proposed methodologies extend the range of borane cluster conjugates available and open new areas for their applications in drug design. Preliminary testing of the obtained molecules for antiviral activity against selected viruses, as inhibitors of blood platelets aggregation and reactive oxygen species (ROS) production in inflammatory processes will be also presented.

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