

Special Issue

G-quadruplex and Microorganisms

Message from the Guest Editor

G-quadruplexes (G4s) are nucleic acids secondary structures that form in DNA or RNA guanine (G)-rich strands. In the recent years, the presence of G4s in microorganisms has attracted increasing interest. In prokaryotes G4 sequences have been reported in several human pathogens and bacterial species present in the environment. Bacterial enzymes able to process G4s have also been identified. In viruses, G4s have been suggested to be involved in key steps of the viral life cycle: they have been associated with the human immunodeficiency virus (HIV), herpes simplex virus 1 (HSV-1), the human papilloma, Zika, Ebola, hepatitis C virus and other viruses' genome. G4 binding proteins and mRNA G4s have been implicated in the regulation of the viral genome replication and translation. G4 ligands have been developed and tested both as tools to study the complexity of G4-mediated mechanisms in the viral life cycle, and as therapeutic agents. Moreover, oligonucleotides that fold into G4 have been found to be active against several microorganisms. This special issue will focus on G4s involved in microorganisms addressing all the above aspects.

Guest Editor

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