PURINE NUCLEOSIDES SECRET - METAL CHELATION AND CHOLINERGIC EFFECTS

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Nucleosides are well known for their antiviral and anticancer activities, with some of them being clinically used as antiviral agents and in chemotherapeutics. Along the course of our studies on the synthesis of purine nucleosides, we uncovered their usefulness as inhibitors of acetylcholinesterase and of butyrylcholinesterase, enzymes relevant for the control of cholinergic effects in neurodegenerative diseases.
Nucleosides potential to chelate biological relevant metals can lead to another promising therapy as disproportion of metal ion homeostasis is common in neurodegenerative disorders and in cardiovascular diseases, contributing to disease progression.
Aiming at the discovery of new dual target compounds based on purine nucleosides, we now report our recent findings on their activity as cholinesterase inhibitors and metal chelators, covering synthetic approaches, and structure/activity relationships to access selectivity for the inhibition of each of the enzymes, and metal chelation.

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