

4th Glycobiology World Congress

September 17-19, 2018 | Rome, Italy



Jorge Justino

Polytechnic Institute of Santarém, Portugal

Antimicrobial agents from sugars embodying a conjugated carbonyl system: Synthesis and bioactivity studies

A series of 3-enopyranosid-2-uloses (compounds type 1) and 2-C-branched-chain conjugated diene-pyranosides (compounds type 2) was achieved in few steps starting from readily available carboxymethyl glycoside lactones (CMGL) (compounds type 3). The methodologies used to introduce the bioactive motifs include oxidation/elimination of tri-*O*-acylated 2-hydroxy pyranosides and Wittig olefination. These molecules were screened for their *in vitro* antibacterial and antifungal activities. (*N*-Dodecylcarbamoyl)methyl enone glycosides were the most active ones among the enones tested, with the α -anomer displaying strong and selective activity toward *Enterococcus faecalis* and the fungal pathogen *Penicillium aurantiogriseum* while the corresponding β -anomer presented a very strong inhibitory effect against two fungal species (*Aspergillus niger* and *Penicillium aurantiogriseum*). (*N*-Dodecyl-/*N*-propargyl/ or *N*-Benzylcarbamoyl)methyl diene-pyranosides exhibited selectively a strong activity toward *Enterococcus faecalis*. Further acute toxicity evaluation indicated low toxic effect of the (*N*-dodecylcarbamoyl)methyl enone glycoside α -anomer and of the carbamoylmethyl diene-pyranosides *N*-protected with propargyl or benzyl groups.

Biography

Jorge Justino has his expertise in the biological evaluation and toxicity studies of natural and synthetic compounds and food chemistry. Full Professor of Escola Superior Agrária de Santarém, MSc. and PhD in Chemical Engineering at Instituto Superior Técnico – Universidade Técnica de Lisboa, Habilitation in Food Chemistry at Universidade de Trás-os-Montes e Alto Douro. He is President of Instituto Politécnico de Santarém and former Director of Escola Superior Agrária de Santarém. He was a member of the networks Euroglycoforum and Prion Chemistry Biology Network and is the representative member of the Instituto Politécnico de Santarém at the European Innovation Partnership A3 Group FCUL consortium.

presidente.ips@ipsantarém.pt