

In this issue

Nuno M. Xavier, Rita Goncalves-Pereira,
Radek Jorda, Denisa Hendrychová
and M. Conceição Oliveira

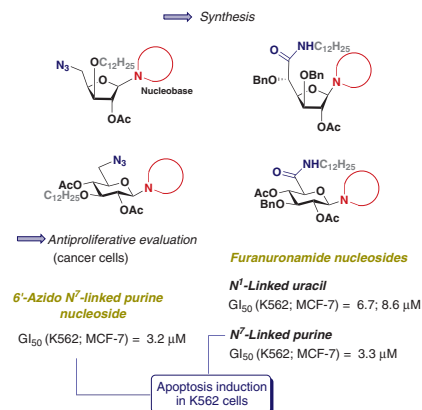
Novel dodecyl-containing azido and glucuronamide-based nucleosides exhibiting anticancer potential

<https://doi.org/10.1515/pac-2019-0106>
Pure Appl. Chem. 2019; 91(7): 1085–1105

Conference paper:

The synthesis of novel series of nucleosides based on 5/6-azidoglycosyl or glucuronamide moieties and containing an *O*- or an *N*-dodecyl chain, respectively, is described. Both types of compounds displayed significant antiproliferative effects in chronic myeloid leukemia (K562) and in breast cancer (MCF-7) cells. The most active nucleosides exhibited GI_{50} values of *ca.* 3 μ M in both cancer cells and were shown to induce apoptosis in K562 cells.

Keywords: anticancer activity; apoptosis; azido nucleosides; glucuronamide-based nucleosides; ICS-29; nucleoside analogs.



Ana M. Matos, Teresa Man, Imane Idrissi, Cleide C. Souza, Emma Mead, Charlotte Dunbar, Joanna Wolak, Maria C. Oliveira, David Evans, James Grayson, Benjamin Partridge, Claire Garwood, Ke Ning, Gary Sharman, Beining Chen and Amélia P. Rauter

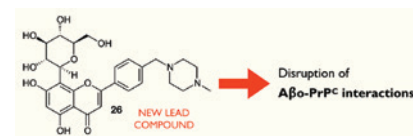
Discovery of *N*-methylpiperazinyl flavones as a novel class of compounds with therapeutic potential against Alzheimer's disease: synthesis, binding affinity towards amyloid β oligomers ($A\beta$) and ability to disrupt $A\beta$ -PrP^C interactions

<https://doi.org/10.1515/pac-2019-0114>
Pure Appl. Chem. 2019; 91(7): 1107–1136

Conference paper:

Synthesis of a new family of *N*-methylpiperazinyl flavones with affinity towards $A\beta$ oligomers, disclosed as disruptors of $A\beta$ -PrP^C interactions and regarded as novel prototype structures against neuronal damage in Alzheimer's disease.

Keywords: $A\beta$ -PrP^C interaction disruptors; Alzheimer's disease; C-glucosylation; flavones; ICS-29.



Lianjie Wang, Jia-Neng Tan, Mohammed Ahmar and Yves Queneau

Solvent issues in the Baylis-Hillman reaction of 5-hydroxymethyl furfural (HMF) and 5-glucosyloxymethyl furfural (GMF). Towards no-solvent conditions

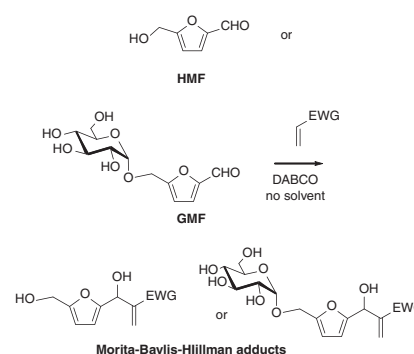
Special issue of Pure and Applied Chemistry, ICS Lisbon 2018

<https://doi.org/10.1515/pac-2019-0215>
Pure Appl. Chem. 2019; 91(7): 1149–1158

Conference paper:

HMF and GMF in solventless Baylis-Hillman reactions: a combination of bio-based chemistry, clean solvent conditions and atom economy.

Keywords: carbohydrate; GMF; HMF; ICS-29; Morita-Baylis-Hillman reaction; no-solvent.



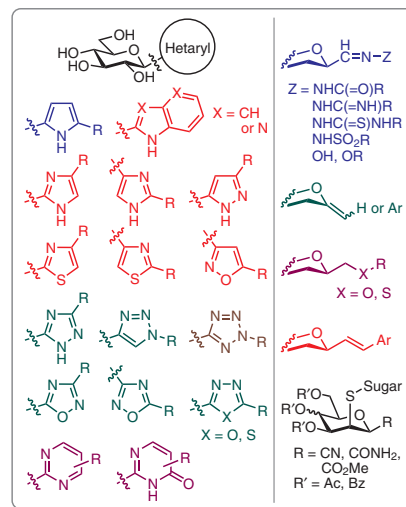
László Somsák, Éva Bokor, László Juhász, Sándor Kun, László Lázár, Éva Juhász-Tóth and Marietta Tóth

New syntheses towards C-glycosyl type glycomimetics

<https://doi.org/10.1515/pac-2019-0208>
Pure Appl. Chem. 2019; 91(7): 1159–1175

Conference paper: Synthetic methods were elaborated for a variety of C-glycosyl heterocycles and other C-glycosyl derivatives among them with the best glucose analog glycogen phosphorylase inhibitor.

Keywords: anhydroaldimines; C-glycosyl compounds; cross couplings; exo-glycals; glycogen phosphorylase; glycomimetics; ICS-29; inhibitors; thiol-ene additions; tosylhydrazones.



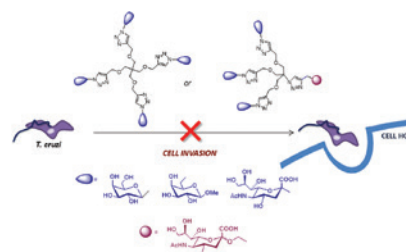
Andreza S. Figueredo, Peterson de Andrade, Thalita B. Riul, Marcelo F. Marchiori, Thais Canassa De Leo, Anna Karoline A. Fleuri, Sérgio Schenkman, Marcelo D. Baruffi and Ivone Carvalho

Galactosyl and sialyl clusters: synthesis and evaluation against *T. cruzi* parasite

<https://doi.org/10.1515/pac-2019-0216>
Pure Appl. Chem. 2019; 91(7): 1191–1207

Conference paper: Novel 1,2,3-triazole-based tetraivalent glycoclusters inhibit *Trypanosoma cruzi* cell invasion and display significant trypanocidal activity upon parasite survival of amastigote forms without cytotoxicity.

Keywords: Chagas disease; CuAAC reaction; ICS-29; multivalent effect; sialidase; *Trypanosoma cruzi*.



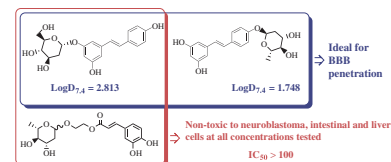
Catarina Dias, Ana M. Matos, Maria T. Blásquez-Sanchez, Patrícia Calado, Alice Martins, Philipp Dätwyler, Beat Ernst, M. Paula Macedo, Nicola Colabufo and Amélia P. Rauter

2-Deoxyglycosylation towards more effective and bioavailable neuroprotective molecules inspired by nature

<https://doi.org/10.1515/pac-2019-0303>
Pure Appl. Chem. 2019; 91(7): 1209–1221

Conference paper:
Deoxyglycosylation modulating neuroprotection and bioavailability: Potent resveratrol and caffeic acid ester glycosides, more efficient than resveratrol at protecting neuronal cells from peroxide-induced cytotoxicity

Keywords: bioactive molecules;
biomolecular chemistry; caffeic acid ester; cytotoxicity; deoxyglycoside; ICS-29; lipophilicity; medicinal chemistry; neuroprotection; organic synthesis; resveratrol.



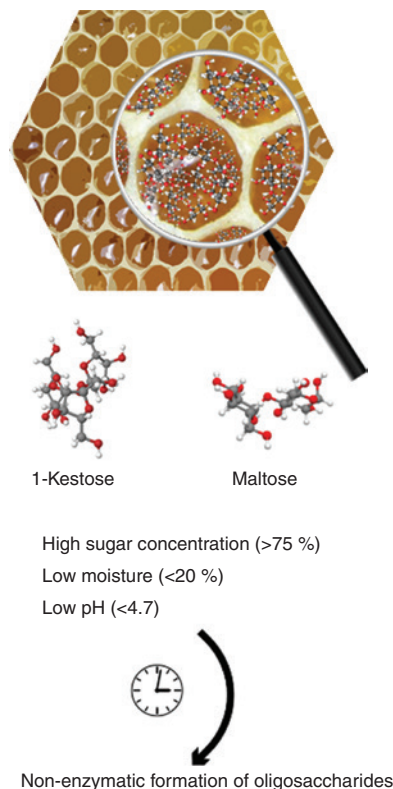
Soraia P. Silva, Ana S. P. Moreira, Maria do Rosário M. Domingues, Dmitry V. Evtuguin, Elisabete Coelho and Manuel A. Coimbra

Contribution of non-enzymatic transglycosylation reactions to the honey oligosaccharides origin and diversity

<https://doi.org/10.1515/pac-2019-0209>
Pure Appl. Chem. 2019; 91(7): 1231–1242

Conference paper: Honey has high concentration of sugar, low moisture percentage and acidic pH. These conditions, along with the ripening period, promote the sugars polymerization, leading to formation of new oligosaccharides.

Keywords: ESI-MS; honey ripening; ICS-29; inulobiose; 1-kestose; maltose; methylation analysis; oligosaccharides formation; orbitrap-mass spectrometry; reversion reactions.



Victoria R. Kohout, Alyssa L. Pirinelli and Nicola L. B. Pohl

Acid-mediated *N*-iodosuccinimide-based thioglycoside activation for the automated solution-phase synthesis of α -1,2-linked-rhamnopyranosides

<https://doi.org/10.1515/pac-2019-0307>
Pure Appl. Chem. 2019; 91(7): 1243–1255

Conference paper: A versatile automated solution-phase synthesis platform produces di- and trisaccharide rhamnan fragments using thioglycoside donors activated by *N*-iodosuccinimide and trimethylsilyl triflate.

Keywords: automated synthesis; carbohydrates; ICS-29; synthesis.

