

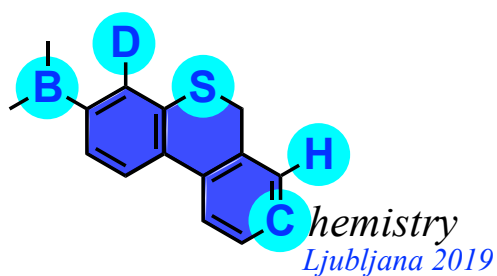


18th Blue Danube Symposium on Heterocyclic Chemistry

Programme

Book of Abstracts

List of Participants



September 18–21, 2019
Ljubljana, Slovenia

10:00–10:30	BD5 Miriam M. Unterlass Nothing but water: hydrothermal synthesis of N-heterocycle-based materials
10:30–10:45	ST9 Jaroslav Piskorz <i>In vitro</i> photodynamic antimicrobial activity of novel boron-dipyrromethene derivatives substituted with various alkylamine substituents
10:45–11:00	ST10 Tomislav Balić Structure and properties of novel oxa-aza macrocycles derived from dialdehydes and diamines
11:00–11:30	Coffee Break <i>Chair: Branko Stanovnik</i>
11:30–12:00	BD6 Zoltán Novák Construction and functionalization of heterocycles with hypervalent reagents
12:00–12:15	ST11 Erika Bálint Multicomponent syntheses of N-heterocycles containing phosphonate or phosphine oxide moiety
12:15–12:45	FT2 Saverio Florio A new era for blood anticoagulant agents: synthesis, chemistry and mechanism of action
12:45–14:30	Lunch <i>Chair: Zita Tokárová</i>
14:30–15:15	PL3 Sylvain Achelle Diazine chromophores: Structure-property relationships, applications as fluorescent sensors, white light emission and nonlinear optics
15:15–15:30	ST12 Antonio Massa Metal-free air oxidation in a convenient cascade approach for the access to isoquinoline-1,3,4(2 <i>H</i>)-triones
15:30–16:00	BD7 Helena Brodnik Žugelj The influence of the quinoline moiety on palladium catalyzed arylation of five-membered heterocycles
16:00–16:15	ST13 Tereza Padrtova Indol-2-carboxylic acid esters containing N-phenylpiperazine moiety - synthesis and anticholinergic activity
17:00	Conference Dinner

MULTICOMPONENT SYNTHESIS OF N-HETEROCYCLES CONTAINING PHOSPHONATE OR PHOSPHINE OXIDE MOIETY

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Organophosphorus compounds play an important role in several fields of life; they have widespread use in organic and medicinal chemistry, as well as in agriculture and plastic industry. Over the last years, the chemistry of heterocyclic phosphonates has received an intensively growing interest.¹ One of the most efficient tools for the preparation of these compounds is the synthesis via multicomponent reactions, which transformations meet several criteria of an “ideal synthesis”, such as high atom economy, fast and simple accomplishment, ability to save time and energy and being environment-friendly.

The synthesis of 3-oxoisindolin-1-ylphosphonate derivatives was studied by the microwave(MW)-assisted three-component reaction of 2-formylbenzoic acid, various >P(O)H reagents (dialkyl phosphites or secondary phosphine oxides) and primary amines. (2-Amino-4*H*-chromen-4-yl)phosphonate derivatives were also prepared by the condensation of salicylaldehydes, malononitrile and >P(O)H reagents under MW conditions. Furthermore, 3,4-dihydropyrimidin-2(1*H*)-one phosphonates were synthesized by the MW-assisted Biginelli reaction of β -ketophosphonates.

Acknowledgements

The project was supported by the Hungarian Research Development and Innovation Office (FK123961), by the bilateral Hungarian-Slovenian Science and Technology Cooperation project (2018-2.1.11-TÉT-SI-2018-00008) and by the National Research, Development and Innovation Fund of Hungary in the frame of the FIEK_16-1-2016-0007 project, and by Slovenian Research Agency (P1-0175 to F. P.). We thank the EN-FIST Centre of Excellence, Ljubljana, Slovenia, for using SuperNova diffractometer. E. B. was supported by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences (BO/00278/17/7), N. B. was supported by the Servier-Beregi Scholarship.

1. M. Haji. *Beilstein J. Org. Chem.*, **2016**, *12*, 1269–1301.

Fordítás

Foszfónát és foszfin-oxid oldalláncot tartalmazó N-heterociklusok multikomponensű reakciója

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A szerves foszforvegyületek az élet számos területén megtalálhatóak. Kiemelkedő jelentőségüket bizonyítja a szerves kémiai és gyógyszeripari szerepük, valamint felhasználásuk a mezőgazdaság és műanyagipar területén. Az elmúlt évek során nagy hangsúlyt kaptak a heterociklusos foszforvegyületek. Ezen származékok egyik legegyszerűbb előállítása multikomponensű reakciókkal történik, amely nemcsak atomhatékony, gyors és egyszerű módszer, de környezetbarát lehetőség is, időt és energiát megspórolva. A 3-oxoizindolin-1-il-foszfónát származékokat mikrohullámú (MW) besugárzás hatására, 2-formil-benzoészavból, változatos $>P(O)H$ reagensekből (dialkil-foszfítokból vagy szekunder foszfin-oxidokból), valamint primer aminokból kiindulva állítottuk elő. Szalicilaldehidet, malononitrilt és $>P(O)H$ reagenseket felhasználva pedig (2-amino-4*H*-kromén-4-il)foszfónátok szintetizálhatóak MW körülmények között. Továbbá a MW besugárzás hatására végbemenő β -ketofoszfónátok Biginelli-reakciójával 3,4-dihidropirimidin-2-(1*H*)-foszfónátok állíthatók elő.