

## Liquid chromatographic retention behaviour of catecholamines and their acidic metabolites on novel molecularly-imprinted polymeric sorbents

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### Abstract:

Catecholamine's (CAs) and their metabolites have always attracted interest of the scientific community due to the role played by these substances in different physiological processes. As pointed by various researchers, simultaneous quantitative determination of these chemicals in different biological fluids is an efficient way of identifying various diseases. However, this challenging task can be accomplished only by using powerful and selective detection methods as well as extensive sample preparation.

To minimize the number of necessary routine steps and enable selective simultaneous isolation of CAs together with their metabolites from biological samples, the strategy for the synthesis of novel molecularly-imprinted polymeric (MIP) sorbents has been developed in our laboratory which combines "dummy" template non-covalent and semi-covalent imprinting technology to incorporate binding sites for CAs and their corresponding metabolites. As a result, both static adsorption tests and dynamic evaluation in packed HPLC microcolumns have demonstrated that newly synthesized polymers exhibit good selectivity towards aforementioned analytes which could help diminish matrix effects during bioanalytical procedures. In view of further development of a solid-phase extraction method the retention behaviour of CAs and their acidic metabolites on MIP sorbents has been studied using different HPLC conditions which helped to identify solvent systems for SPE cartridge loading, washing and elution steps.

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### Biography:

Anton Podjava has completed his PhD at the age of 27 years in the University of Latvia. He is a postdoctoral researcher at the University of Latvia. He has published 10 papers in reputed journals in the field of mass spectrometry and chromatography.

### Speaker Publications:

1. "Zwitterionic sulfonates as m/z shift reagents for 5-methylcytosine detection in DNA using flow injection analysis and electrospray ionization mass spectrometry", *European Journal of Mass Spectrometry/ Volume 21 Issue 4*; 659-67
2. "Electrospray ionization mass spectrometry of non-covalent complexes formed between N-alkylimidazolium-containing zwitterionic sulfonates and protonated bases", *European Journal of Mass Spectrometry/Vol 20 issue 6*:467-75
3. "Crystal and Molecular Structure and Stability of Isoniazid Cocrystals with Selected Carboxylic Acids", *Crystal Growth & Design/Vol 13 Issue 3*:1082-1090
4. "Chemical Properties of Zwitterionic Imidazolium Alkanecarboxylates Studied in Gas-Phase by Electrospray Ionization – Collision-Induced Dissociation / Cviterjonu Tipa Imidazolija Alkankarboksilātu Ķīmiskās Īpašības Gāzes Fāzē, Kas Pētītas Ar Elektroizsmidzināšanas Jonizāciju – Sadursmju Inducēto Disociāciju", *Latvian Journal of Chemistry 51 Issue 3*

5."Positive and negative electrospray ionization-collision-induced dissociation of sulfur-containing zwitterionic liquids", European Journal of Mass Spectrometry / Vol 17 issue 4:377-83

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