

Publications:

1. Balog, J.; Szaniszlo, T.; Schaefer, K. C.; Denes, J.; Lopata, A.; Godorhazy, L.; Szalay, D.; Balogh, L.; Sasi-Szabo, L.; Toth M.; Takats, Z., Identification of Biological Tissues by Rapid Evaporative Ionization Mass Spectrometry, *Analytical Chemistry*, DOI: 10.1021/ac101283x, Publication Date (Web): August 3, 2010.
2. Gerbig, S.; Takats, Z., Analysis of triglycerides in food items by desorption electrospray ionization mass spectrometry. *Rapid Communications in Mass Spectrometry* **2010**, 24, (15), 2186-2192.
3. Rompp, A.; Guenther, S.; Schober, Y.; Schulz, O.; Takats, Z.; Kummer, W.; Spengler, B., Histology by Mass Spectrometry: Label-Free Tissue Characterization Obtained from High-Accuracy Bioanalytical Imaging. *Angewandte Chemie-International Edition* **2010**, 49, (22), 3834-3838.
4. Katona, M.; Kiss, K.; Angyal, V.; Kucsma, N.; Sarkadi, B.; Takats, Z.; Szakacs, G., A mass spectrometry based functional assay for the quantitative assessment of ABC transporter activity. *Rapid Communications in Mass Spectrometry* **2009**, 23, (21), 3372-3376.
5. Schafer, K. C.; Denes, J.; Albrecht, K.; Szaniszlo, T.; Balog, J.; Skoumal, R.; Katona, M.; Toth, M.; Balogh, L.; Takats, Z., In Vivo, In Situ Tissue Analysis Using Rapid Evaporative Ionization Mass Spectrometry. *Angewandte Chemie-International Edition* **2009**, 48, (44), 8240-8242.
6. Hegedus, C.; Ozvegy-Laczka, C.; Apati, A.; Magocsi, M.; Nemet, K.; Orfi, L.; Keri, G.; Katona, M.; Takats, Z.; Varadi, A.; Szakacs, G.; Sarkadi, B., Interaction of nilotinib, dasatinib and bosutinib with ABCB1 and ABCG2: implications for altered anti-cancer effects and pharmacological properties. *British Journal of Pharmacology* **2009**, 158, (4), 1153-1164.
7. Denes, J.; Katona, M.; Hosszu, A.; Czuczy, N.; Takats, Z., Analysis of Biological Fluids by Direct Combination of Solid Phase Extraction and Desorption Electrospray Ionization Mass Spectrometry. *Analytical Chemistry* **2009**, 81, (4), 1669-1675.
8. Taban, L. M.; van der Burgt, Y. E. M.; Duursma, M.; Takats, Z.; Seynen, M.; Konijnenburg, M.; Vijftigschild, A.; Attema, I.; Heeren, R. M. A., A novel workflow control system for Fourier transform ion cyclotron resonance mass spectrometry allows for unique on-the-fly data-dependent decisions. *Rapid Communications in Mass Spectrometry* **2008**, 22, (8), 1245-1256.

9. Takats, Z.; Kobliha, V.; Sevcik, K.; Novak, P.; Kruppa, G.; Lemr, K.; Havlicek, V., Characterization of DESI-FTICR mass spectrometry - from ECD to accurate mass tissue analysis. *Journal of Mass Spectrometry* **2008**, 43, (2), 196-203.
10. Vargha, M.; Takats, Z.; Konopka, A.; Nakatsu, C. H., Optimization of MALDI-TOF MS for strain level differentiation of Arthrobacter isolates. *Journal of Microbiological Methods* **2006**, 66, (3), 399-409.
11. Cooks, R. G.; Wiseman, J.; Venter, A.; Talaty, N.; Nieflie, M.; Takats, Z., Metabolomics, tissue analysis and pharmaceutical analysis in the ambient environment. *Abstracts of Papers of the American Chemical Society* **2006**, 231, 323-ANYL.
12. Cooks, R. G.; Ouyang, Z.; Takats, Z.; Wiseman, J. M., Ambient mass spectrometry. *Science* **2006**, 311, (5767), 1566-1570.
13. Myung, S.; Wiseman, J. M.; Valentine, S. J.; Takats, Z.; Cooks, R. G.; Clemmer, D. E., Coupling desorption electrospray ionization with ion mobility/mass spectrometry for analysis of protein structure: Evidence for desorption of folded and denatured states. *Journal of Physical Chemistry B* **2006**, 110, (10), 5045-5051.
14. Talaty, N.; Takats, Z.; Cooks, R. G., Rapid in situ detection of alkaloids in plant tissue under ambient conditions using desorption electrospray ionization. *Analyst* **2005**, 130, (12), 1624-1633.
15. Wiseman, J. M.; Takats, Z.; Gologan, B.; Davisson, V. J.; Cooks, R. G., Direct characterization of enzyme-substrate complexes by using electrosonic spray ionization mass spectrometry. *Angewandte Chemie-International Edition* **2005**, 44, (6), 913-916.
16. Wiseman, J. M.; Puolitaival, S. M.; Takats, Z.; Cooks, R. G.; Caprioli, R. M., Mass spectrometric profiling of intact biological tissue by using desorption electrospray ionization. *Angewandte Chemie-International Edition* **2005**, 44, (43), 7094-7097.
17. Chen, H. W.; Talaty, N. N.; Takats, Z.; Cooks, R. G., Desorption electrospray ionization mass spectrometry for high-throughput analysis of pharmaceutical samples in the ambient environment. *Analytical Chemistry* **2005**, 77, (21), 6915-6927.
18. Cotte-Rodriguez, I.; Takats, Z.; Talaty, N.; Chen, H. W.; Cooks, R. G., Desorption electrospray ionization of explosives on surfaces: Sensitivity and selectivity enhancement by reactive desorption electrospray ionization. *Analytical Chemistry* **2005**, 77, (21), 6755-6764.
19. Takats, Z.; Wiseman, J. M.; Cooks, R. G., Ambient mass spectrometry using desorption electrospray ionization (DESI): instrumentation, mechanisms and

- applications in forensics, chemistry, and biology. *Journal of Mass Spectrometry* **2005**, 40, (10), 1261-1275.
- 20. Vargha, M.; Takats, Z.; Marialigeti, K., Degradation of atrazine in a laboratory scale model system with Danube river sediment. *Water Research* **2005**, 39, (8), 1560-1568.
 - 21. Takats, Z.; Cotte-Rodriguez, I.; Talaty, N.; Chen, H. W.; Cooks, R. G., Direct, trace level detection of explosives on ambient surfaces by desorption electrospray ionization mass spectrometry. *Chemical Communications* **2005**, (15), 1950-1952.
 - 22. Misharin, A. S.; Laughlin, B. C.; Vilkov, A.; Takats, Z.; Zheng, O. Y.; Cooks, R. G., High-throughput mass spectrometer using atmospheric pressure ionization and a cylindrical ion trap array. *Analytical Chemistry* **2005**, 77, (2), 459-470.
 - 23. Gologan, B.; Takats, Z.; Alvarez, J.; Wiseman, J. M.; Talaty, N.; Ouyang, Z.; Cooks, R. G., Ion soft-landing into liquids: Protein identification, separation, and purification with retention of biological activity. *Journal of the American Society for Mass Spectrometry* **2004**, 15, (12), 1874-1884.
 - 24. Nagy, K.; Pollreisz, F.; Takats, Z.; Vekey, K., Atmospheric pressure chemical ionization mass spectrometry of aldehydes in biological matrices. *Rapid Communications in Mass Spectrometry* **2004**, 18, (20), 2473-2478.
 - 25. Blake, T. A.; Zheng, O. Y.; Wiseman, J. M.; Takats, Z.; Guymon, A. J.; Kothari, S.; Cooks, R. G., Preparative linear ion trap mass spectrometer for separation and collection of purified proteins and peptides in arrays using ion soft landing. *Analytical Chemistry* **2004**, 76, (21), 6293-6305.
 - 26. Takats, Z.; Wiseman, J. M.; Gologan, B.; Cooks, R. G., Mass spectrometry sampling under ambient conditions with desorption electrospray ionization. *Science* **2004**, 306, (5695), 471-473.
 - 27. Nanita, S. C.; Takats, Z.; Cooks, R. G., Chiral enrichment of serine via formation, dissociation, and soft-landing of octameric cluster ions. *Journal of the American Society for Mass Spectrometry* **2004**, 15, (9), 1360-1365.
 - 28. Takats, Z.; Wiseman, J. M.; Gologan, B.; Cooks, R. G., Electrospray ionization. A gentle technique for generating folded proteins and protein complexes in the gas phase and for studying ion - Molecule reactions at atmospheric pressure. *Analytical Chemistry* **2004**, 76, (14), 4050-4058.
 - 29. Cooks, R. G.; Ouyang, Z.; Takats, Z.; Gologan, B.; Blake, T. M.; Davisson, V. J., Ion soft land as a preparative method: Protein microarrays generated by mass

spectrometry. *Abstracts of Papers of the American Chemical Society* **2004**, 227, 178-PHYS.

30. Takats, Z.; Cooks, R. G., Thermal formation of serine octamer ions. *Chemical Communications* **2004**, (4), 444-445.
31. Takats, Z.; Nanita, S. C.; Cooks, R. G., Serine octamer reactions: Indicators of prebiotic relevance. *Angewandte Chemie-International Edition* **2003**, 42, (30), 3521-3523.
32. Schlosser, G.; Takats, Z.; Vekey, K., Formation of solvated ions in the atmospheric interface of an electrospray ionization triple-quadrupole mass spectrometer. *Journal of Mass Spectrometry* **2003**, 38, (12), 1245-1251.
33. Nagy, K.; Takats, Z.; Pollreisz, F.; Szabo, T.; Vekey, K., Direct tandem mass spectrometric analysis of amino acids in dried blood spots without chemical derivatization for neonatal screening. *Rapid Communications in Mass Spectrometry* **2003**, 17, (9), 983-990.
34. Takats, Z.; Nanita, S. C.; Schlosser, G.; Vekey, K.; Cooks, R. G., Atmospheric pressure gas-phase H/D exchange of serine octamers. *Analytical Chemistry* **2003**, 75, (22), 6147-6154.
35. Ouyang, Z.; Takats, Z.; Blake, T. A.; Gologan, B.; Guymon, A. J.; Wiseman, J. M.; Oliver, J. C.; Davisson, V. J.; Cooks, R. G., Preparing protein microarrays by soft-landing of mass-selected ions. *Science* **2003**, 301, (5638), 1351-1354.
36. Takats, Z.; Schlosser, G.; Vekey, K., Hydrogen/deuterium exchange of electrosprayed ions in the atmospheric interface of a commercial triple-quadrupole mass spectrometer. *International Journal of Mass Spectrometry* **2003**, 228, (2-3), 729-741.
37. Schlosser, G.; Takats, Z.; Vekey, K.; Pocsfalvi, G.; Malorni, A.; Windberg, E.; Kiss, A.; Hudecz, F., Mass spectrometric analysis of combinatorial peptide libraries derived from the tandem repeat unit of MUC2 mucin. *Journal of Peptide Science* **2003**, 9, (6), 361-374.
38. Cooks, R. G.; Nanita, S. C.; Takats, Z.; Vekey, V.; Gozzo, F. C.; Eberlin, M. N., Homochiral clustering of serine: Implications for homochirogenesis. *Abstracts of Papers of the American Chemical Society* **2003**, 225, 260-ANYL.
39. Takats, Z.; Nanita, S. C.; Cooks, R. G.; Schlosser, G.; Vekey, K., Amino acid clusters formed by sonic spray ionization. *Analytical Chemistry* **2003**, 75, (6), 1514-1523.
40. Trezl, L.; Hullan, L.; Jaszay, Z. M.; Szarvas, T.; Petnehazy, I.; Szende, B.; Bocsi, J.; Takats, Z.; Vekey, K.; Toke, L., Antagonistic reactions of arginine and lysine against

formaldehyde and their relation to cell proliferation, apoptosis, folate cycle and photosynthesis. *Molecular and Cellular Biochemistry* **2003**, 244, (1), 167-176.

41. Koch, K. J.; Gozzo, F. C.; Nanita, S. C.; Takats, Z.; Eberlin, M. N.; Cooks, R. G., Chiral transmission between amino acids: Chirally selective amino acid substitution in the serine octamer as a possible step in homochirogenesis. *Angewandte Chemie-International Edition* **2002**, 41, (10), 1721-+.
42. Takats, Z.; Drahos, L.; Schlosser, G.; Vekey, K., Feasibility of formation of hot ions in electrospray. *Analytical Chemistry* **2002**, 74, (24), 6427-6429.
43. Riter, L. S.; Takats, Z.; Cooks, R. G., Single-sided membrane introduction mass spectrometry for on-line determination of semi-volatile organic compounds in air. *Analyst* **2001**, 126, (11), 1980-1984.
44. Riter, L. S.; Takats, Z.; Charles, L.; Cooks, R. G., High surface area membrane introduction mass spectrometry for analysis of volatile and semi-volatile organic compounds in air. *Rapid Communications in Mass Spectrometry* **2001**, 15, (17), 1520-1524.
45. Takats, Z.; Vekey, K.; Hegedus, L., Qualitative and quantitative determination of poloxamer surfactants by mass spectrometry. *Rapid Communications in Mass Spectrometry* **2001**, 15, (10), 805-810.
46. Takats, Z.; Vargha, M.; Vekey, K., Investigation of atrazine metabolism in river sediment by high-performance liquid chromatography/mass spectrometry. *Rapid Communications in Mass Spectrometry* **2001**, 15, (18), 1735-1742.
47. Takats, Z.; Koch, K. J.; Cooks, R. G., Organic chloramine analysis and free chlorine quantification by electrospray and atmospheric pressure chemical ionization tandem mass spectrometry. *Analytical Chemistry* **2001**, 73, (18), 4522-4529.
48. Cooks, R. G.; Takats, Z.; Augusti, R.; Turowski, M.; Ritter, L. M., Process mass spectrometry using miniature traps and membrane introduction. *Abstracts of Papers of the American Chemical Society* **2001**, 222, 193-ANYL.
49. Cooks, R. G.; Riter, L. S.; Koch, K. J.; Charles, L.; Badman, E.; Takats, Z., Miniature mass spectrometers with membrane interfaces for on-site. *Abstracts of Papers of the American Chemical Society* **2001**, 221, 111-ENVR.
50. Kadar, M.; Takats, Z.; Karancsi, T.; Farsang, G., The role of halogen substituents in the electrooxidation of 4-halogenoanilines in neutral acetonitrile. *Electroanalysis* **1999**, 11, (10-11), 809-813.

51. Takats, Z.; Vekey, K., Electrospray and atmospheric pressure chemical ionisation of aromatic compounds in dichloromethane solvent. *European Mass Spectrometry* **1998**, 4, (5), 365-370.
52. Takats, Z.; Torkos, K., Determination of chlorobenzenes in environmental samples using solid phase microextraction, thermal desorption and analysis by gas chromatography coupled to FID, ECD, MSD IRD detectors. *Chromatographia* **1998**, 48, (1-2), 74-80.

Awards:

- 2008 Hungarian Stars Award
2009 Mattauch-Herzog Preis, Deutsche Gesellschaft für Massenspektrometrie