VAMS® publication list

June 2020 Edition

2020

Lucía Paniagua-González, Carla Díaz-Louzao, Elena Lendoiro, et.al. **VAMS for Assaying Immunosuppressants from Venous Whole Blood by LC-MS/MS Using a Novel Atmospheric Pressure Ionization Probe (Unispray™).** Journal of Pharmaceutical and Biomedical Analysis, 12 June 2020, In Press, Journal Pre-proof. doi.org/10.1016/j.jpba.2020.113422

Mycophenolic Acid |Tacrolimus | Sirolimus | Everolimus | Cyclosporin A | Stability

Michele Protti, Roberto Mandrioli, Laura Mercolini. **Microsampling and LC–MS/MS for antidoping testing of glucocorticoids in urine.** Bioanalysis (Ahead of Print), 12 Jun 2020. https://doi.org/10.4155/bio-2020-0044

Endogenous & Exogenous Glucocorticoids | Antidoping Testing | Urine Analysis

Carleen Klumpp-Thomas, Heather Kalish, Matthew Drew, et.al. **Standardization of enzyme-linked immunosorbent assays for serosurveys of the SARS-CoV-2 pandemic using clinical and at-home blood sampling.** medRxiv 2020.05.21.20109280; doi: https://doi.org/10.1101/2020.05.21.20109280

SARS-CoV-2 | ELISA | IgG & IgM | Home Sampling | Immunoassay | MAb

Irene van den Broek, Mitra Mastali, Kelly Mouapi, Cory Bystrom, C. Noel Bairey Merz, and Jennifer E. Van Eyk. **Quality Control and Outlier Detection of Targeted Mass Spectrometry Data from Multiplex Protein Panels.** Journal of Proteome Research 2020 19 (6), 2278-2293 doi: 10.1021/acs.jproteome.9b00854

Bottom-up Proteomics | Biomarker Validation

Bian, S., Van den Berghe, N., Vandersmissen, L., Tops, S., Vermeire, S., Ferrante, M., Gils, A., Thomas, D. **Evaluating an easy sampling method using dried blood spots to determine vedolizumab concentrations.** Journal of Pharmaceutical and Biomedical Analysis, 185, 5 Jun 2020, 113224. https://doi.org/10.1016/j.jpba.2020.113224

Clinical Validation | Dried Blood vs. Serum Concentration Correlation Studies

Berends, Sophie E., Bloem, Karien., de Vries, Annick., Schaap, Tiny., Rispens, Theo., Strik, Anne S., Talwar, Rawina., Löwenberg, Mark., D'Haens, Geert R., Mathôt, Ron A. **Monitoring of Adalimumab Concentrations at Home in Patients with Inflammatory Bowel Disease Using Dried Blood Samples.** Therapeutic Drug Monitoring: April 2020 - Volume 42 - Issue 2 - p 289-294 doi:10.1097/FTD.0000000000000686

TDM | ELISA | Immunoassay | mAb | Serum vs. Dried Blood Samples | Home Sampling

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Michael M Mbughuni, Maria A Stevens, Loralie J Langman, Yogish C Kudva, William Sanchez, Patrick G Dean, Paul J Jannetto. **Volumetric Microsampling of Capillary Blood Spot vs Whole Blood Sampling for Therapeutic Drug Monitoring of Tacrolimus and Cyclosporin A: Accuracy and Patient Satisfaction.** The Journal of Applied Laboratory Medicine, Volume 5, Issue 3, May 2020, Pages 516–530, https://doi.org/10.1093/jalm/jfaa005

Tacrolimus & Cyclosporin A | TDM | Patient Satisfaction

Delahaye, L., Dhont, E., De Cock, P., De Paepe, P., Stove, C.P. **Dried blood microsamples: Suitable as an alternative matrix for the quantification of paracetamol-protein adducts?.** Toxicology Letters, Vol. 324, 15 May 2020, 65-74. https://doi.org/10.1016/j.toxlet.2020.02.001

Protein Adducts | Paracetamol

Leaney, A.E., Horner, C., Grace, P.B., Mawson, D.H. **Selection of a surrogate matrix for the quantification of an endogenous analyte in dried whole blood.** Bioanalysis, 12(6), 25 Mar 2020. https://doi.org/10.4155/bio-2020-0012

25-hydroxyvitamin D3 | LC-MS/MS | Surrogate Matrices

M Stern, M Giebels, T Fey, M Lübking, J Alferink, G Hempel. **Clinical validation study to derive conversion factors from capillary blood concentration to plasma concentration for venlafaxine and desvenlafaxine.** Pharmacopsychiatry 2020; 53(03): 145, DOI: 10.1055/s-0040-1710132

TDM | VAMS Conversion Factors to Fit Current Therapeutic Reference Ranges

Marasca, C., Protti, M., Mandrioli, R., Atti, A.R., Armirotti, A., Cavalli, A., De Ronchi, D., Mercolini, L. **Whole blood and oral fluid microsampling for the monitoring of patients under treatment with antidepressant drugs.** Journal of Pharmaceutical and Biomedical Analysis, 188, Sep 2020, 113384. https://doi.org/10.1016/j.jpba.2020.113384

Next Gen Antidepressant Reagents | Blood & Oral Fluids | TDM

Thierry P.I.J.M. Canisius, J.W.P. Hans Soons, Pauline Verschuure, Emmeke A. Wammes-van der Heijden, Rob P.W. Rouhl, H.J. Marian Majoie. **Therapeutic drug monitoring of anti-epileptic drugs – a clinical verification of volumetric absorptive micro sampling.** Clinical Chemistry and Laboratory Medicine (Ahead of Print), 11 Feb 2020, https://doi.org/10.1515/cclm-2019-0784

Anti-epileptic Drugs | Correlations of VAMS vs. Conventional Sampling | Stability Studies

Mongongu, C., Moussa, E.M., Semence, F., Roulland, I., Ericsson, M., Coudoré, F., Marchand, A., Buisson, C. **Use of capillary dried blood for quantification of intact IGF-I by LC–HRMS for antidoping analysis.** Bioanalysis (Ahead of Print), 1 June 2020, https://doi.org/10.4155/bio-2020-0013

IGF-1 | Growth Hormone Doping | High-Throughput Quantification | WADA-Requirement Validated

Mandrioli, R., Mercolini, L., Protti ,M. **Blood and Plasma Volumetric Absorptive Microsampling (VAMS) Coupled to LC-MS/MS for the Forensic Assessment of Cocaine Consumption.** Molecules. 2020;25(5):1046. Published 2020 Feb 26. doi:10.3390/molecules25051046

Cocaine & Metabolites | DPX | LC-MS/MS

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Moorthy, G.S., Vedar, C., Zane, N.R., Downes, K.J., Prodell, J.L., DiLiberto, M., Zuppa, A.F. **Development and validation of a volumetric absorptive microsampling- liquid chromatography mass spectrometry method for the analysis of cefepime in human whole blood: Application to pediatric pharmacokinetic study.** Journal of Pharmaceutical and Biomedical Analysis, 179, Feb 2020, 113002. https://doi.org/10.1016/j.jpba.2019.113002

Cefepime | Whole Blood vs. Plasma vs. VAMS | PK Study | Pediatrics | Review Article

Li, H. **Volumetric absorptive microsampling in pharmacokinetic studies.** International Journal of Pharmacokinetics, Vol. 4, No. 2, 17 Mar 2020. https://doi.org/10.4155/ipk-2020-0001

Bioanalysis | mAbs | PK/PD | Rodent Studies

Londhe, V., & Rajadhyaksha, M. (2020). **Opportunities and obstacles for microsampling techniques in bioanalysis: Special focus on DBS and VAMS.** Journal of Pharmaceutical and Biomedical Analysis, 182, 113102. doi: 10.1016/j.jpba.2020.113102

Microsampling | VAMS vs. DBS | Method Validation | Review Article

Mohamed, S., Riva, R., Moresco, M., Plazzi, G., & Contin, M. (2020). **Development and validation of volumetric absorptive microsampling coupled with UHPLC–MS/MS for the analysis of gamma-hydroxybutyric acid in human blood.** Biomedical Chromatography. doi: 10.1002/bmc.4781

γ-hydroxybutyric Acid | UHPLC-MS/MS

Marchand, A., Roulland, I., Semence, F., & Audran, M. (2020). **Volumetric Absorptive Microsampling (VAMS) technology for IGF-1 quantification by automated chemiluminescent immunoassay in dried blood.** Growth Hormone & IGF Research, 50, 27–34. doi: 10.1016/j.ghir.2019.12.001

IGF-1 dosage | Immunoassay | Serum vs. Capillary Blood vs. Venous Blood

Nakadi, F. V., Garde, R., Márcia A. M. S. Da Veiga, Cruces, J., & Resano, M. (2020). **A simple and direct atomic absorption spectrometry method for the direct determination of Hg in dried blood spots and dried urine spots prepared using various microsampling devices.** Journal of Analytical Atomic Spectrometry, 35(1), 136–144. doi: 10.1039/c9ja00348g

Mercury | Hg | Atomic Absorption Spectroscopy

2019

Wickremsinhe, E., Short, M., Talkington, B., & West, L. (2019). **DIY Blood Sampling for Pediatric Clinical Trials—The Patients Perspective.** Applied Clinical Trials. Sep. 30, 2019.

Pediatrics | At-home Sample Collection | Patient Perspective

Fehlmann, T., Backes, C., Pirritano, M., Laufer, T., Galata, V., Kern, F., Kahraman, M., Gasparoni, G., Ludwig, N., Lenhof, H., Gregersen, H.A., Francke, R., Meese, E., Simon, M., Keller, A. **The sncRNA Zoo: a repository for circulating small noncoding RNAs in animals.** Nucleic Acids Research, Volume 47, Issue 9, 21 May 2019, Pages 4431–4441, https://doi.org/10.1093/nar/gkz227

sncRNAs | Low-input-volume NGS | 19 Animal Species

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Shufelt, C., Dzubur, E., Joung, S. et al. **A protocol integrating remote patient monitoring patient reported outcomes and cardiovascular biomarkers.** npj Digit. Med. 2, 84 (2019). https://doi.org/10.1038/s41746-019-0145-6

Biomarkers | Prediction, Risk, & Evaluation of Major Cardiac Events (PRE-MACE) | Proteomics

Moorthy, G.S., Vedar, C., DiLiberto, M., Zuppa, A.F. **A patient-centric liquid chromatography-tandem mass spectrometry microsampling assay for analysis of cannabinoids in human whole blood: Application to pediatric pharmacokinetic study.** Journal of Chromatography B, 1130-1131, Nov 2019, 121828. https://doi.org/10.1016/j.jchromb.2019.121828

THC, CBD, CBN | Whole Blood vs. Plasma vs. VAMS | PK Study | Pediatric Clinical Samples

Velghe, S., Delahaye, L., Ogwang, R., Hotterbeekx, A., Colebunders, R., Mandro, M., … Stove, C. P. (2019). **Dried blood microsampling-based therapeutic drug monitoring of anti-epileptic drugs in children with nodding syndrome and epilepsy in Uganda and the Democratic Republic of the Congo.** Therapeutic Drug Monitoring, 1. doi: 10.1097/ftd.0000000000000720

Nodding Syndrome Epilepsy | VAMS vs. DBS | Low-resource Region

Wang, J., Li, D., Wiltse, A., Emo, J., Hilchey, S. P., & Zand, M. S. (2019). **Application of volumetric absorptive microsampling (VAMS) to measure multidimensional anti-influenza IgG antibodies by the mPlex-Flu assay.** Journal of Clinical and Translational Science, 3(6), 332–343. doi: 10.1017/cts.2019.410

mPlex-Flu assay | Influenza A Virus Antibodies

Abu-Rabie, P., Neupane, B., Spooner, N., Rudge, J., Denniff, P., Mulla, H., & Pandya, H. (2019). **Validation of methods for determining pediatric midazolam using wet whole blood and volumetric absorptive microsampling.** Bioanalysis, 11(19), 1737–1754. doi: 10.4155/bio-2019-0190

Pediatrics | PK Study | Wet vs. Dried Blood

Capiau, S., Veenhof, H., Koster, R. A., Bergqvist, Y., Boettcher, M., Halmingh, O., … Alffenaar, J.-W. C. (2019). **Official International Association for Therapeutic Drug Monitoring and Clinical Toxicology Guideline.** Therapeutic Drug Monitoring, 41(4), 409–430. doi: 10.1097/ftd.0000000000000643

Dried Blood Sample Method Validation | Microsampling | Therapeutic Drug Monitoring

Gustavsen, M. T., Midtvedt, K., Vethe, N. T., Robertsen, I., Bergan, S., & Åsberg, A. (2019). **Tacrolimus area under the concentration versus time curve monitoring, using home-based volumetric absorptive capillary microsampling.** Therapeutic Drug Monitoring, 1. doi: 10.1097/ftd.0000000000000697

Tacrolimus | AUC-target | Therapeutic Drug Monitoring

Morato, N. M., Pirro, V., Fedick, P. W., & Cooks, R. G. (2019). **Quantitative Swab Touch Spray Mass Spectrometry for Oral Fluid Drug Testing.** Analytical Chemistry, 91(11), 7450–7457. doi: 10.1021/acs.analchem.9b01637

Paper Spray | Drugs of Abuse Testing | Saliva

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Spooner, N., Anderson, K. D., Siple, J., Wickremsinhe, E. R., Xu, Y., & Lee, M. (2019). **Microsampling: considerations for its use in pharmaceutical drug discovery and development.** Bioanalysis, 11(10), 1015–1038. doi: 10.4155/bio-2019-0041

Bioanalysis | Drug Development

Gunash, J., Aristizabal-Henao, J. J., & Stark, K. D. (2019). **Quantitating fatty acids in dried blood spots on a common collection card versus a novel wicking sampling device.** Prostaglandins, Leukotrienes and Essential Fatty Acids, 145, 1–6. doi: 10.1016/j.plefa.2019.05.002

Fatty Acids | DBS vs. VAMS vs Wet Blood | GC | LC-MS

Berends, S. E., Dhaens, G. R. A. M., Schaap, T., Vries, A., Rispens, T., Bloem, K., & Mathôt, R. A. A. (2019). **Dried blood samples can support monitoring of infliximab concentrations in patients with inflammatory bowel disease: A clinical validation.** British Journal of Clinical Pharmacology, 85(7), 1544–1551. doi: 10.1111/bcp.13939 S

Infliximab | Therapeutic Drug Monitoring | IBD patients | At-home Sampling | Clinical Validation

Gruzdys, V., Merrigan, S. D., & Johnson-Davis, K. L. (2019). **Feasibility of Immunosuppressant Drug Monitoring by a Microsampling Device.** The Journal of Applied Laboratory Medicine, 4(2), 241–246. doi: 10.1373/jalm.2018.028126

Immunosuppressants | Therapeutic Drug Monitoring | VAMS vs Wet Blood | Assay Bias Studies

Lei, B. U. W., & Prow, T. W. (2019). **A review of microsampling techniques and their social impact.** Biomedical Microdevices, 21(4). doi: 10.1007/s10544-019-0412-y

VAMS vs Other Microsampling Devices

Sandy Joung, Eldin Dzubur, Irene van den Broek, Aubrey Love, Lori Martinez-Rubio, Mayra Lopez, Benjamin Noah, Shivani Dhawan, Qin Fua, Mitra Mastalia, Jennifer E. Van Eyk, Brennan Spiegel, C. Noel Bairey Merz, Chrisandra Shufelt. **Early Detection of Atrial Fibrillation-Atrial Flutter Using Remote Patient Monitoring.** Journal of Medical Cases, Volume 10, Number 2, February 2019, 31-36

Major Adverse Cardiac Events | Protein Biomarkers | Proteomics | Precision Medicine

Kelley Brady, Ying Qu, Deborah Stimson, Robert Apilado, Roberta Vezza Alexander, Smitha Reddy, Puja Chitkara, John Conklin, Tyler O'Malley, Claudia Ibarra, Thierry Dervieux. **Transition of Methotrexate Polyglutamate Drug Monitoring Assay from Venipuncture to Capillary Blood-Based Collection Method in Rheumatic Diseases.** 10.1373/jalm.2018.027730 Published January 2019

Methotrexate | Therapeutic Drug Monitoring | VAMS vs. Wet Blood | Dosing Guide

Marius Schmidt, Manfred Rauh, Matthias C. Schmid, Hanna Huebner, Matthias Ruebner, Rainer Wachtveitl, Nada Cordasic, Wolfgang Rascher, Carlos Menendez-Castro, Andrea Hartner and Fabian B. Fahlbusch **Influence of Low Protein Diet-Induced Fetal Growth Restriction on the Neuroplacental Corticosterone Axis in the Rat.** Frontier Endocrinology, 11 March 2019 | https://doi.org/10.3389/fendo.2019.00124

Maternal Steroids | Rat Model | VAMS to Venous Blood Correlation

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Roland J.W. Meesters. **Biofluid Collection in Metabolomics by the Application of the novel Volumetric Absorptive Microsampling Technology: a mini-Review.** Reviews in Separation Sciences ISSN 2589-1677, Vol.1, No.1. October, 2019.

Metabolomics | Internal standards | Extractions | Stability

Rapholo, A.A.**Comparing Diene Derivatisation Methods of Dry Blood Samples For Vitamin D Metabolites Quantification by Liquid Chromatography-tandem Mass Spectrometry.** University of Pretoria April 2017, https://pdfs.semanticscholar.org/c117/f091d5a97669b6396e5d74aadf594c467503.pdf

Vitamin D Metabolites | VAMS vs. Serum vs. DBS | Extraction and Derivatization | LC-MS/MS

Sara Capiaua, Eduardo Bolea-Fernandez, Lieve Balcaen, Catherine Van Der Straeten, Alain G.Verstraete, Frank Vanhaecke, Christophe P.Stove. **Development, validation and application of an inductively coupled plasma – Mass spectrometry method to determine cobalt in metal-on-metal prosthesis patients using volumetric absorptive microsampling.** Talanta 18 June 2019 https://doi.org/10.1016/j.talanta.2019.06.055

Cobalt | Metal-on-Metal Prosthesis| Semi-automated VAMS extraction | ICP-MS

Valentin Ion, Caroline Legoff, Etienne Cavalier, Pierre Delanaye, Anne-Catherine Servais, Daniela-Lucia Muntean, and Marianne Filleta. **Determination of iohexol by capillary blood microsampling and UHPLC-MS/MS.** J Pharm Anal. 2019 Aug; 9(4): 259–265. Published online 2019 Jun 27. doi: 10.1016/j.jpha.2019.06.003

Iohexol | Kidney Function Monitoring | Extraction Protocol Screening | Method Validation

Vethe, Nils Tore., Gustavsen, Marte Theie., Midtvedt, Karsten., Lauritsen, May Ellen., Andersen, Anders M., Åsberg, Anders., Bergan, Stein. **Tacrolimus can be reliably measured with volumetric absorptive capillary microsampling throughout the dose interval in renal transplant recipients.** Therapeutic Drug Monitoring. May 15, 2019. doi: 10.1097/FTD.0000000000000655

Tacrolimus | Therapeutic Drug Monitoring | VAMS vs. Venipuncture | Patient Self-sampling

Remco A Koster, Pascal Niemeijer, Herman Veenhof, Kai van Hateren, Jan-Willem C Alffenaar, Daan J Touw. **A volumetric absorptive microsampling LC–MS/MS method for five immunosuppressants and their hematocrit effects.** Bioanalysis. 2019 Mar 20 Vol. 11, No. 6

Tacrolimus | Sirolimus | Everolimus | Temsirolimus | Cyclosporin A | Mycophenolic acid

Friedl, B., Kurlbaum, M., Kroiss, M. et al. **A method for the minimally invasive drug monitoring of mitotane by means of volumetric absorptive microsampling for a home-based therapeutic drug monitoring.** Anal Bioanal Chem (2019). https://doi.org/10.1007/s00216-019-01868-1

Adrenocortical Carcinoma | Narrow Therapeutic Index | TDM | HPLC-UV

D'Urso, Annachiara, BiolSciD; Rudge, James, PhD; Patsalos, Philip N., FRCPath, PhD; de Grazia, Ugo, PhD*,1 **Volumetric absorptive microsampling - A new sampling tool for therapeutic drug monitoring of anti-epileptic drugs.** Therapeutic Drug Monitoring: May 27, 2019 - Volume Publish Ahead of Print - Issue - pdoi: 10.1097/FTD.0000000000000652

Therapeutic Drug Monitoring (TDM) | Anti-epileptic Drugs (AEDs) | Bioanalytical Method Validation

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David Marshall, BSc Brian Keevil, Professor. **Quantification of testosterone, androstenedione and 17-hydroxyprogesterone collected using Mitra® micro sampling devices.** Journal of the Endocrine Society, Volume 3, Issue Supplement_1, April-May 2019, SAT-011

Congenital Adrenal Hyperplasia | Steroid Hormone Biology & Action | Overcoming The Hematocrit Issue

David Sciberras, Christian Otoul, Françoise Lurquin, John Smeraglia, Aurélia Lappert, Steven De Bruyn, Jan Jaap van Lier. **A pharmacokinetic study of radiprodil oral suspension in healthy adults comparing conventional venous blood sampling with two microsampling techniques.** © 2019 The Authors. Pharmacology Research & Perspectives published by John Wiley & Sons Ltd, British Pharmacological Society and American Society for Pharmacology and Experimental Therapeutics.

Bioequivalence | Drug Safety | Pharmacokinetics | Phase 1

Miranda G.M Kok, Cindy Nix, Gwenaël Nys, Marianne Fillet. **Targeted metabolomics of whole blood using volumetric absorptive microsampling.** Talanta. 2019 May 15; 49-58

Metabolomics | Amino Acids and Organic Acids | Stability Studies

Nadine B. Andriguetti, Letícia L. Lisboa, Siomara R. Hahn, Lidiane R. Pagnussat, Marina V. Antunes, Rafael Linden. **Simultaneous determination of vancomycin and creatinine in plasma applied to volumetric absorptive microsampling devices using liquid chromatography-tandem mass spectrometry.** J Pharm Biomed Anal 2019 February 20: 315-324

Vancomycin & Creatinine | Therapeutic Drug Monitoring | Low-Resource Regions

Jessica D. Schulz, Anna Neodo, Jean T. Coulibaly, Jennifer Keiser. **Pharmacokinetics of albendazole, albendazole sulfoxide and albendazole sulfone determined from plasma, blood, dried blood spots and Mitra® samples of hookworm-infected adolescents.** Antimicrobial Agents and Chemotherapy. Feb 2019; AAC.02489-18; DOI: 10.1128/AAC.02489-18

Anthelmintic | Pharmacokinetic Study | VAMS vs DBS

Ganesh S. Moorthy, Christina Vedar, Nicole Zane, Janice L. Prodell, Athena F. Zuppa. **Development and validation of a volumetric absorptive microsampling assay for analysis of voriconazole and voriconazole N-oxide in human whole blood.** J Chromatography B. 2019 February 15: 67-75

Antifungal | Assay Development | Stability Studies

R.B.Verheijen, B.Thijssen, F.Atrafi, J.H.M.Schellens, H.Rosing, N.de Vries, J.H.Beijnen, R.H.J.Mathijssen, N.Steeghs, A.D.R.Huitemaae. **Validation and clinical application of an LC-MS/MS method for the quantification of everolimus using volumetric absorptive microsampling.** J Chromatography B. 2019 Jan 1; 234-239

Immunosuppressant | Bioanalytical Validation | Clinical Application

2018

M. Resano, M.A. Belarra, E. Garcia-Ruiz, M. Armendia & Rello, L. **Dried matrix spots and clinical elemental analysis. Current status, difficulties, and opportunities.** TrAC Trends in Analytical Chemistry February 2018, Volume 99, pp 75-87

Advantages of Dried Matrix Sampling | Quantitative Elemental Information

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Velghe, S. & Stove, C.P. **Volumetric absorptive microsampling as an alternative tool for therapeutic drug monitoring of first-generation anti-epileptic drugs.** Anal Bioanal Chem March 2018, Volume 410, Issue 9, pp 2331-2341

Anti-epileptic Drugs | Sample Preparation and Method Validation | UPLC-MS/MS

Jana Kovac, Gordana Panic, Anna Neodo, Isabel Meister, Jean T Coulibaly, Jessica D Shulz & Jennifer Keiser. **Evaluation of a novel micro-sampling device, Mitra™, in comparison to dried blood spots, for analysis of praziquantel in Schistosoma haematobium-infected children in rural Côte d'Ivoire.** J Pharm Biomed Anal 2018 Mar 20: 339-346

Parasitic Drugs | vs. Dried Blood Spot | Low Resource Region

Charlotte Jones, Gareth J Dunseath, Jessica Lemon. & Stephen D Luzio. **Microsampling collection methods for measurement of C-peptide in whole blood.** Journal of Diabetes Science and Technology March 9 2018 https://doi.org/10.1177/1932296818763464

Circulating Biomarker | vs. Dried Blood Spot | Plasma Reference Range Agreement

Jani Koponen, James Rudge, Stuart Kushon, & Hannu Kiviranta. **Novel volumetric adsorptive microsampling technique for determination of perfluorinated compounds in blood.** Analytical Biochemistry, Volume 545, 2018, Pages 49-53

Perfluoroalkyl Acids | Environmental Pollutant | Biomonitoring

Kim Y, Jeon JY, Han SH, Ha N, Jang K, & Kim MG. **Quantitative analysis of acetylsalicylic acid in human blood using volumetric absorptive microsampling.** Transl Clin Pharmacol. 2018 Mar;26(1):32-38

Stabilizing Reagents | Validation | Aspirin

Ida Kristine, LysgaardAndersen, CecilieRosting, Astrid Gjelstad, & Trine GrønhaugHalvorsen. **Volumetric absorptive MicroSampling vs. other blood sampling materials in LC–MS-based protein analysis – preliminary investigations.** J Pharm Biomed Anal 2018 Jul 15: 239-246

Proteins | Vs. Dried Blood Spot | LC-MS

Xie I, Xu Y, Anderson M, Wang M, Xue L, Breidinger S, Goykhman D, Woolf EJ, & Bateman KP. **Extractability-mediated stability bias and hematocrit impact: High extraction recovery is critical to feasibility of volumetric adsorptive microsampling (VAMS) in regulated bioanalysis.** J Pharm Biomed Anal. 2018 Apr 5: 156:58-66

Regulated Bioanalysis | Extraction Recovery | Stability

Michele Protti, Maria Carmen Catapano, Boaz Gedaliahu Samolsky Dekel, James Rudge, Gilberto Gerra, Lorenzo Somaini, Roberto Mandrioli, & Laura Mercolini. **Determination of oxycodone and its major metabolites in haematic and urinary matrices: Comparison of traditional and miniaturised sampling approaches.** J Pharm Biomed Anal Volume 152, 2018 Apr 15: 204-214

Anti-doping | Bioanalysis | Blood & Urine

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Kita, K., Noritake, K. & Mano, Y. **Application of a Volumetric Absorptive Microsampling Device to a Pharmacokinetic Study of Tacrolimus in Rats: Comparison with Wet Blood and Plasma.** Eur J Drug Metab Pharmacokinet (2018) https://doi.org/10.1007/s13318-018-0493-7

Tacrolimus | PK Study in Rats | Dried Blood vs. Wet Blood vs. Plasma

Nick Verougstraete, Veronique Stove, & Christophe Stove. **Wet absorptive microsampling at home for HbA1c monitoring in diabetic children.** Clinical Chemistry and Laboratory Medicine, 2018 June 14, Epub Ahead of Print https://doi.org/10.1515/cclm-2018-0207

HbA1c | Remote Monitoring | Pediatrics

Michele Protti, Roberto Mandrioli, & Laura Mercolini. **Tutorial: Volumetric absorptive microsampling (VAMS).** Analytica Chima, 2018 Sep 5. doi: 10.1016/j.aca.2018.09.004. [Epub ahead of print]

VAMS Use Cases | Analytical Workflow | Automation

M.G.M. Kok, M. Fillet. **Volumetric absorptive microsampling: Current advances and applications.** J Pharm Biomed Anal. 2018 Jan 5: 147:288-296

Application Overview | Sample Preparation | Hematocrit

Kasie Fang, Chester L Bowen, John F Kellie, Molly Z Karlinsey, & Christopher A Evans. **Drug monitoring by volumetric absorptive microsampling: method development considerations to mitigate hematocrit effects.** Bioanalysis, Ahead of Print Published Online 15 Jan 2018 | https://doi.org/10.4155/bio-2017-0221

Regulated Bioanalysis | Pharmacokinetics / Toxicokinetics | Hematocrit

Karin Bloem, Tiny Schaap, Ronald Boshuizen, Eva L Kneepkens, Gerritt J Wolbink, Annick de Vries, & Theo Rispens. **Capillary blood microsampling to determine serum biopharmaceutical concentration: Mitra microsampler vs dried blood spot.** Bioanalysis, 2018 June 04; 10(11)

Therapeutic mAbs | VAMS vs DBS | Serum/Plasma Concentration Estimations

Fragala MS, Goldman SM, Goldman MM, Bi C, Colletti JD, Arent SM, Walker AJ, & Clarke NJ. **Measurement of Cortisol and Testosterone in Athletes: Accuracy of Liquid Chromatography-Tandem Mass Spectrometry Assays for Cortisol and Testosterone Measurement in Whole-Blood Microspecimens.** J Strength Cond Res, 2018 Jul 4. doi: 10.1519/JSC.0000000000002726. [Epub ahead of print]

Hormones | Performance Monitoring | Finger-prick vs Venous Specimens

Marcello Pirritano, Tobias Fehlmann, Thomas Laufer, Nicole Ludwig, Gilles Gasparoni, Yongping Li, Eckart Meese, Andreas Keller, and Martin Simon. **Next Generation Sequencing Analysis of Total Small Noncoding RNAs from Low Input RNA from Dried Blood Sampling.** Anal Chem, 2018 Sep 10. doi: 10.1021/acs.analchem.8b03557. [Epub ahead of print]

Biomarkers | Library Preparation | Remote Patient Monitoring

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Sangeeta Tanna, Ahmed Alalaqi, Dennis Bernieh & Graham Lawson. **Volumetric absorptive microsampling (VAMS) coupled with high-resolution, accurate-mass (HRAM) mass spectrometry as a simplified alternative to dried blood spot (DBS) analysis for therapeutic drug monitoring of cardiovascular drugs.** Clinical Mass Spectrometry Volume 10, December 2018. 1-8 [Epub ahead of print]

VAMS vs. DBS cards | Remote Drug Monitoring | Cardiovascular Drugs

Lisa Delahaye, Evelyn Dhont, Pieter De Cock, Peter De Paepe, Christophe P. Stove. **Volumetric absorptive microsampling as an alternative sampling strategy for the determination of paracetamol in blood and cerebrospinal fluid.** Anal Bioanal Chem (2018). https://doi.org/10.1007/s00216-018-1427-6

Cerebrospinal Fluid (CSF) | Paracetamol | LC-MS/MS Method Development

Joseph M Taylor, Andrew T Hughes, Anna M Milan, James Rudge, Andrew S Davison & Lakshminarayan R Ranganath.**Evaluation of the Mitra microsampling device for use with key urinary metabolites in patients with Alkaptonuria.** Bioanalysis, 2018 November 6; 10 (23)

Amino Acids | Inborn Metabolism Error | LC-MS/MS

Hua Li, Tammy Bigwarfe, Maria Myzithras, Erica Waltz & Jennifer Ahlberg. **Application of Mitra microsampling for pharmacokinetic bioanalysis of monoclonal antibodies in rats.** Bioanalysis, 2018 November 21; 11 (1)

Monoclonal Antibody (mAb) | Animal PK Studies | ELISA

2017

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Bead-based Extraction Protocol | HCT Bias Study | Naproxen & Ritonavir

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Illicit Drugs | vs. Dry Blood Spots | Bioanalytical Validation

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Extraction Studies | Hematocrit (HCT)

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Disease Monitoring | At-home Sampling | vs. Venous Blood

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Low-resource Region | vs. Dry Blood Spot | Method Validation

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Animal Testing | Biotherapeutic | Single Rodent PK Profile

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Micronutrient Monitoring | vs. Dried Blood Spot | Stable Isotope Dilution Assay (SIDA)

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Protein Quantitation | Multiple Reaction Monitoring | LC-MS/MS

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Medication Adherence | Clinical Study | vs. Dried Blood Spots

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Therapeutic Drug Monitoring | vs. Venous Blood | vs. Dried Blood Spot

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Animal Testing | PK Studies in Mice | Bioanalytical Validation

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Fe Concentration | vs. Venous Blood | Extraction Studies

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Marine Toxin | Validated Method | ELISA

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Metabolomics | Extraction Procedures | Stability

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Tacrolimus | Hematocrit Evaluation | Stability

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Therapeutic Drug Monitoring | Pediatrics | Asthma

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Antibiotics | Method Development and Validation | vs. Dried Blood Spot

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Clinical Samples | No Sample Preparation | "Collect-and-Spray"

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Estrogens | PK Studies in Small Animals | Nanofluidic LC-Chip-MS/MS

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Pediatrics | Clinical Study | Wet vs. Dry Blood

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Tacrolimus | At-Home Monitoring | Wet vs. Dry Blood

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Chemical Agent | Dried Plasma | Stability Study

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Micronutrient Monitoring | vs. Plasma | Hematocrit (HCT)

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Glycopeptide | Recovery Study | vs. Dried Plasma

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Metals | Ultra-trace Levels | ICP-MS/MS

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Therapeutic Drug Monitoring | Pediatrics | vs. Dried Blood Spots

2015

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Hematocrit (HCT) | vs Dried Blood Spots

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Hematocrit (HCT) | Extraction Studies

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Peptide Hormone | Mitra Extractions | vs Dried Blood Spots

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Cross-laboratory Study | Hematocrit (HCT) | vs Dried Blood Spots

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Small Molecule | Animal Testing | TK Study

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Small Molecule | Anticoagulant | Bioanalytical Validation

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Animal Testing | PK Study | vs. Capillary Tubes

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Antimicrobials | Blood Plasma | Stability Studies

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Microsampling Technology Validation | Dried Blood

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