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

D’Urso, Annachiara, BiolSciD1; Rudge, James, PhD2; Patsalos, Philip N., FRCPath, PhD3; 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**

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**


**Bioequivalence | Drug Safety | Pharmacokinetics | Phase 1**


**Metabolomics | Amino Acids and Organic Acids | Stability Studies**


**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**


**Antifungal | Assay Development | Stability Studies**


**Immunosuppressant | Bioanalytical Validation | Clinical Application**


**Advantages of Dried Matrix Sampling | Quantitative Elemental Information**


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


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


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

The CE|IVD Mitra Microsampler FDA class I medical device is for direct specimen collection of blood and other biological fluids. It is not specific to any clinical test, and is not for use in diagnostic procedures. Use of the Mitra Microsampler in Laboratory Developed Tests (LDTs) requires further processing including the establishment of performance characteristics and successful validation by the laboratory in a manner consistent with CLIA requirements. The Mitra device is patent pending. Mitra is a registered trademark and VAMS is a trademark of Neoteryx, LLC. Copyright © 2017 Neoteryx, LLC. All rights reserved.
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**


**Stabilizing Reagents | Validation | Aspirin**


**Proteins | Vs. Dried Blood Spot | LC-MS**


**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**


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


**HbA1c | Remote Monitoring | Pediatrics**


**VAMS Use Cases | Analytical Workflow | Automation**
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**


**Hormones | Performance Monitoring | Finger-prick vs Venous Specimens**


**Biomarkers | Library Preparation | Remote Patient Monitoring**

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**


**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**
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Illicit Drugs | vs. Dry Blood Spots | Bioanalytical Validation


Animal Testing | NC3Rs | Bioavailability of Drug Formulations

Ye, Z., & Gao, H. Evaluation of sample extraction methods for minimizing hematocrit effect on whole blood analysis with volumetric absorptive microsampling. Bioanalysis. 2017 Feb;9(4):349-357

Extraction Studies | Hematocrit (HCT)


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


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

Plomley, J., Villeneuve, D., Chen, M., Mekhssian, K., Didur, O., Ruddock, R., & Keyhani, A. Large molecule application of volumetric absorptive microsampling for the determination of a single-rat PK profile for exenatide by LC-MS/MS. WRIB 11th Annual Conference, 3-7 April 2017, Los Angeles, CA

Animal Testing | Biotherapeutic | Single Rodent PK Profile

Koop, M., & Rychlik, M. Assessing volumetric absorptive microsampling coupled with stable isotope dilution assay and liquid chromatography-tandem mass spectrometry as potential diagnostic tool for whole blood 5-methyltetrahydrofolic Acid. Front Nutr. 2017 Apr 18;4:9

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


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

Medication Adherence | Clinical Study | vs. Dried Blood Spots


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


Animal Testing | PK Studies in Mice | Bioanalytical Validation


Fe Concentration | vs. Venous Blood | Extraction Studies


hTISIS | Multi-Element Analysis


Marine Toxin | Validated Method | ELISA


Metabolomics | Extraction Procedures | Stability


Tacrolimus | Hematocrit Evaluation | Stability
Cala, MP., Meesters, RJ. **Comparative study on microsampling techniques in metabolic fingerprinting studies applying gas chromatography-MS analysis.** *Bioanalysis. 2017 Sep 9 (17): 1329-1340*

**Metabolomics | Breast Cancer Fingerprinting**


**Therapeutic Drug Monitoring | Pediatrics | Asthma**


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


**Clinical Samples | No Sample Preparation | “Collect-and-Spray”**


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


**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**

Mercolini, L., Protti, M., Catapano, M. C., Rudge, J., & Sberna, A. E. **LC–MS/MS and volumetric absorptive microsampling for quantitative bioanalysis of cathinone analogues in dried urine, plasma and oral fluid samples.** *J Pharm Biomed Anal. 2016 May 10;123:186-94*

**Illicit Drugs | Urine, Plasma, Oral Fluids | Bioanalytical Validation**
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*Pediatrics | Clinical Study | Wet vs. Dry Blood*

Stephenson, S., Rudge, J., **Development of a potential at-home assay for tacrolimus monitoring using a microsampling device.** *XXVIII Congress of the Scandinavian Transplantation Society, 11-13 May 2016, Stockholm, Sweden*

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


*Chemical Agent | Dried Plasma | Stability Study*

Nicholls H., Tang J.C.Y., Dutton, J., & Fraser, W.D. **Evaluation of the mitra micro-sampling device against dried blood spot cards for measurement of 25-hydroxy vitamin D3 by LC-MS/MS.** *MSACL EU Annual Conference, 12-15 Sep 2016, Salzburg, Austria*

*Micronutrient Monitoring | vs. Plasma | Hematocrit (HCT)*


*Glycopeptide | Recovery Study | vs. Dried Plasma*


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

Marahatta, A., Megaraj, V., McGann, P.T., Ware, R.E., & Setchell, K. **Stable-Isotope Dilution HPLC-Electrospray Ionization Tandem Mass Spectrometry Method for Quantifying Hydroxyurea in Dried Blood Samples.** *Clin Chem. 2016 Dec;62(12):1593-1601*

*Therapeutic Drug Monitoring | Pediatrics | vs. Dried Blood Spots*


*Hematocrit (HCT) | vs Dried Blood Spots*

**Hematocrit (HCT) | Extraction Studies**


**Peptide Hormone | Mitra Extractions | vs Dried Blood Spots**


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


**Small Molecule | Animal Testing | TK Study**

Miao, Z., Farnham, J. G., Hanson, G., Podoll, T., Reid, M. J. Bioanalysis of emixustat (ACU-4429) in whole blood collected with volumetric absorptive microsampling by LC – MS / MS. Bioanalysis. 2015;7(16):2071-83

**Small Molecule | Anticoagulant | Bioanalytical Validation**


**Animal Testing | PK Study | vs. Capillary Tubes**


**Antimicrobials | Blood Plasma | Stability Studies**


**Microsampling Technology Validation | Dried Blood**