Jan Gunash, Juan J. Aristizabal-Henao, Ken D. Stark. **Quantitating fatty acids in dried blood spots on a common collection card versus a novel wicking sampling device.** *Prostaglandins, Leukotrienes and Essential Fatty Acids* Volume 145, 1-22 (June 2019)

**Fatty acids | DBS vs. VAMS vs wet blood | GC | LC-MS**


**Infliximab | Therapeutic drug monitoring | IBD patients | At-home sampling | Clinical validation**

Valentinias Gruzdys, Stephen D. Merrigan, Kamisha L. Johnson-Davis. **Feasibility of Immunosuppressant Drug Monitoring by a Microsampling Device.** 10.1373/jalm.2018.028126 Published March 2019

**Immunosuppressants | Therapeutic drug monitoring | VAMS vs wet blood | Assay bias studies**

Benson U. W. Lei, Tarl W. Prow. **A Review of Microsampling Techniques And Their Social Impact.** *Biomedical Microdevices* December 2019, 21:81

**VAMS vs other microsampling devices | Skin and blood sampling techniques**


**Major adverse cardiac events | Protein biomarkers | Remote patient monitoring | Precision medicine**


**Drugs of abuse | Oral fluid | No Sample Prep | Point-of-care | Touch spray MS**

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**
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.
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Tacrolimus, VAMS, microsampling, AUC-target, Therapeutic Drug Monitoring

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.000000000000655

Tacrolimus | Therapeutic drug monitoring | VAMS vs. venipuncture | Patient self-sampling

A volumetric absorptive microsampling LC–MS/MS method for five immunosuppressants and their hematocrit effects. Bioanalysis. 2019 Mar 20 Vol. 11, No. 6

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


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

Bioequivalence | Drug Safety | Pharmacokinetics | Phase 1
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**Metabolomics | Amino Acids and Organic Acids | Stability Studies**


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


**Anthelmintic | Pharmacokinetic Study | VAMS vs DBS**

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

**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**

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


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


**Perfluoroalkyl Acids | Environmental Pollutant | Biomonitoring**


**Stabilizing Reagents | Validation | Aspirin**


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


**Regulated Bioanalysis | Extraction Recovery | Stability**


**Anti-doping | Bioanalysis | Blood & Urine**


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


**HbA1c | Remote Monitoring | Pediatrics**


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


**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**


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


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


Monoclonal Antibody (mAb) | Animal PK Studies | ELISA


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


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
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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-rodent 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

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*htTISIS | Multi-Element Analysis*


*Marine Toxin | Validated Method | ELISA*


*Metabolomics | Extraction Procedures | Stability*

Kita, K., Mano, Y. Application of volumetric absorptive microsampling device for quantification of tacrolimus in human blood as a model drug of high blood cell partition. J Pharm Biomed Anal. 2017 Sep 5; 143:168-175

*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”*

Nys, G., Cobraiville, G., Kok, M.G.M., Wéra, O., Servais, A.C., & Fillet, M. Comparison of nanofluidic

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


**Illicit Drugs | Urine, Plasma, Oral Fluids | Bioanalytical Validation**


**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**
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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
Kipper, K., Barker, C., Lonsdale, D., Sharland, M., & Johnston, A. **Evaluation of the Mitra microsampling device for dry sample processing in a pharmacokinetic/pharmacodynamic study of beta-lactams.** *42nd Symposium on HPLC and Related Techniques, 21-25 June 2015, Geneva, Switzerland*

*Antimicrobials | Blood Plasma | Stability Studies*


*Microsampling Technology Validation | Dried Blood*