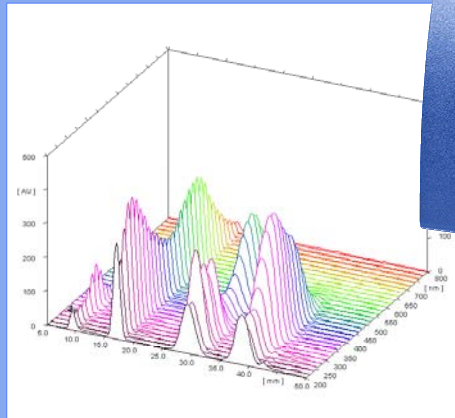
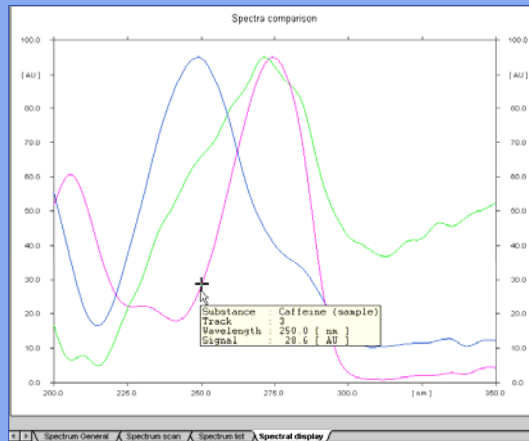


News from CAMAG, Club de CCM

Raphael Vizzini

Area Sales Manager, Europe, Middle East, Africa

New TLC Scanner



New TLC Scanner

- Extended spectral range 190nm-900nm
- Improved signal to noise ratio
- Up to 36 track with up to 100 substances per track
- Complies with the rules of GMP/GLP and 21 CFR Part 11
- Small footprint
- Fully automatic scanning
- Re-designed for user comfort



The CAMMAG TLC-MS Interface



Option big table
40x40 cm

Options

- 022.8410 big table 40x40 cm
- 022.8415 Plunger for circular zone 4mm diameter
- **022.8416 4mm round circular head for preparative plates up to 0.5mm layer**
- 022.8418 Oval shaped plunger for band application
- **022.8419 Elution Head for DBS cards**

Direct Analysis of Dried Blood Spots (DBS) using CAMAG TLC-MS:



Current Technique

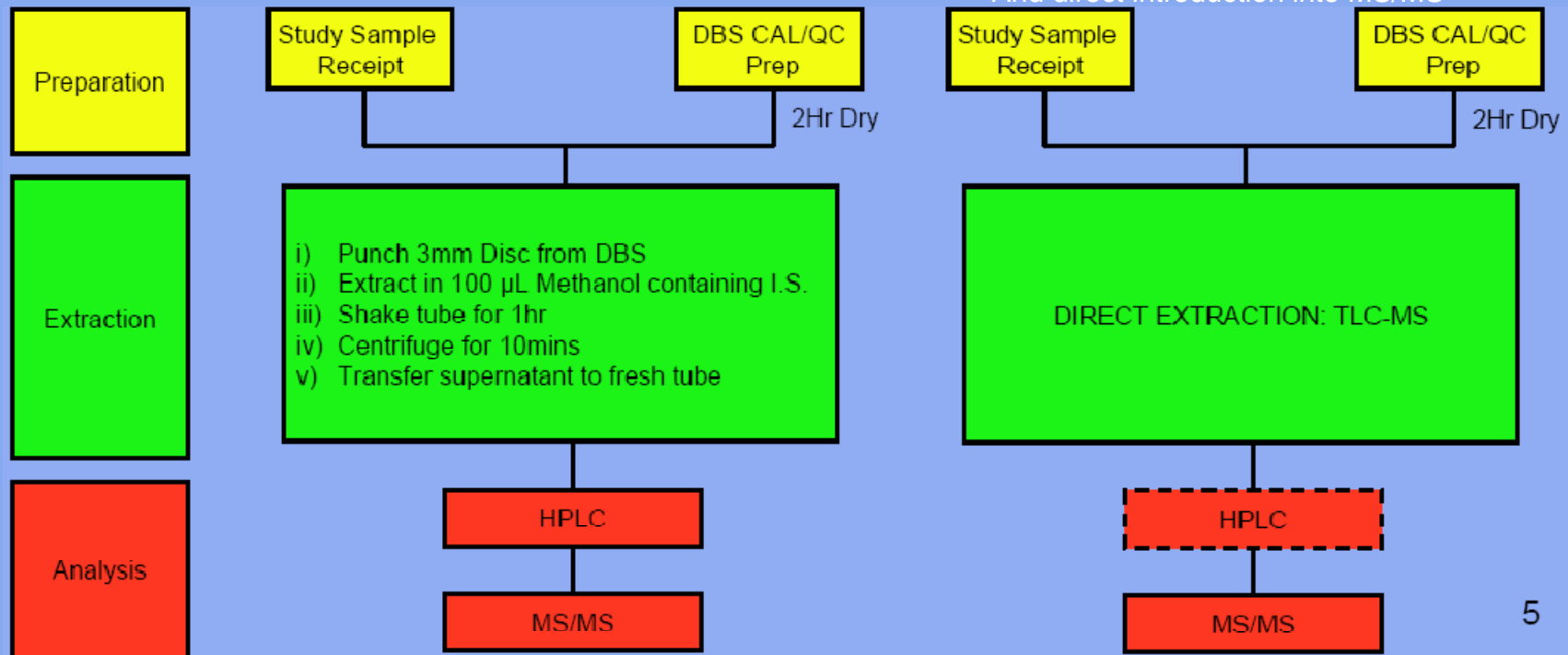
Manual extraction with methanol
Followed by HPTLC-MS/MS analysis

Direct Extraction: „Instant“

Extraction in Mobile Phase followed by HPLC-MS/MS analysis or

Direct Analysis: „Instant“

extraction in extraction solvent
And direct introduction into MS/MS



Sensitivity Summary (Using HPLC Column)

	Response: Analyte Peak Height/cps		% increase in Response
	Std HPLC-MS/MS	CAMAG 2s EXT	
Single Analyte Assays:			
Sitamaquine	110000	770000	+700%
Paracetamol	5940	80000	+1300%
Cassette Test compounds:			
Ibuprofen	35000	290000	+800%
4-Nitrophthalic Acid	200000	2300000	+1150%
Paracetamol	74000	250000	+350%
Simvastatin	18000	92000	+500%
Sitamaquine	300000	2000000	+700%
Benzethonium Chloride	730000	1000000	+140%
Proguanil	250000	1000000	+400%
SB243213 Internal Std (Pos ion mode)	730000	1500000	+200%
SB243213 Internal Std (Neg ion mode)	350000	2000000	+600%

Publication about DBS-MS Interface

Direct Quantitative Bioanalysis of Drugs in Dried Blood Spot Samples Using a Thin-Layer Chromatography Mass Spectrometer Interface

Paul Abu-Rabie* and Neil Spooner

PreClinical Development Drug Metabolism and Pharmacokinetics, GlaxoSmithKline Research and Development, Park Road, Ware, Hertfordshire, SG12 0DP, U.K.

The CAMAG thin-layer chromatography mass spectrometer (TLC-MS) interface has been assessed as a tool for the direct quantitative bioanalysis of drugs from dried blood spot (DBS) samples, using an MS detector, with or without high-performance liquid chromatography (HPLC) separation. The approach gave acceptable sensitivity, linearity, accuracy, and precision data for bioanalytical validations with and without the inclusion of HPLC separation. In addition, the direct elution technique was shown to increase assay sensitivity for a range of analytes

monitoring studies at physiologically relevant concentrations.⁵⁻⁷ The surge in interest in DBS techniques for supporting pharmaceutical exposure studies is due to the many advantages it offers over conventional plasma sampling. These include the reduction in blood volumes required, with associated cost and ethical advantages, the simplification of clinical sampling procedures, and the reductions in sample processing, storage, and transportation costs.⁴⁻⁷ However, it is notable that these benefits are not necessarily transferred into the bioanalytical laboratory. For example, the requirement to punch a disk out of the DBS sample

chromatography-MS interface

Preclinical drug development and pharmacokinetic scientists at GlaxoSmithKline (GSK, Hertfordshire, UK) have evaluated the use of a CAMAG thin-layer chromatography-mass spectrometer (TLC-MS) interface for analysis of dried blood spot (DBS) samples with the

be a requirement for a detector with an extended usable dynamic range, probably in the scale of five orders of magnitude.”

Dried blood spot sampling has many advantages for the analysis of blood drug concentrations in preclinical and clinical studies, includ-

Extraction Based Sealing Probe for Mass Spectrometric Dried Spots and Mouse Tissue Sections

Chemical Sciences Division, Oak Ridge National Laboratory,

... that combines ambient surface sampling and ionization for analysis of analytes that are in or on surfaces.¹⁻³ Direct liquid extraction surface sampling probes reconstitute or extract an analyte from a surface by contacting that surface with a confined liquid stream. That stream is both brought to the surface and is then carried on to the ionization source through a probe acting as a liquid conduit. In general, these types of probes might be coupled to any liquid introduction ionization source (e.g., electrospray ionization (ESI), atmospheric pressure chemical ionization (APCI), or another). Once in solution and carried into the source, analyte ionization is

“sensibilità”
pari a circa 12 volte



CAMMAG

Fully automated DBS-MS extraction device



New Catalogue

CATALOG 2010/11

INSTRUMENTAL
THIN-LAYER CHROMATOGRAPHY





**WORLD LEADER IN
PLANAR CHROMATOGRAPHY**

DOCUMENTATION AND EVALUATION WITH TLC VISUALIZER

TLC Visualizer captures images that are, without doubt, equal to the real thing. The system provides 30 megapixel resolution and UV light as well as an UV 366 and UV 302 nm light. A 1 megapixel camera with highly linear CCD chip and excellent detection captures the images while the whole process is controlled by the software WinCATS.

Key features

- Quick and intuitive operation.
- Optimized light sources for improved homogeneity of a plate under UV 366, UV 302, while light of red and blue light.
- Powerful high resolution 12 bit CCD camera with auto-focus.
- Automatic image optimization for all illumination modes with fixed capture parameters ensure highest reproducibility from the same plate. This provides the basis for reliable images taken from different plates.
- Saving of all images taken of the same plate in a single file together with all other analytical data.
- Option of individual lens characteristics provides data based on individual measurements and corrects distortion, advanced clean plate connection, and built-in connection.
- Option through Comparison View for comparing from multiple images / plates on the same screen.

For quantitative evaluation images captured with WinCATS are supported by the optional evaluation software WinCATS.



TLC AND MASS SPECTROMETRY WITH THE TLC-MS INTERFACE

Identify peaks and evaluate them as a task using a software for forensic and commercial fields.

TLC-MS Interface

TLC-MS coupling is the powerful solution to the highest chromatography and mass spectrometry (MS) and thereby possible for both techniques.

For all samples may be processed with HPLC or HPLC-MS to do a low detection of the compounds or impurities in the sample load or a task of MS compatible solvent, for the HPLC separation. On the other hand HPLC-MS is a preferred method to separate samples.

In the past solvent substances were scraped off from the plate into a tube and transferred into the MS. Now a new and universal TLC-MS interface is available which can use extractions of solvent and directly online into HPLC-MS methods and techniques (APCI-MS, APCI-MS or ESI-MS). Quantitative substances are directly extracted from a TLC-MS interface spectrometry image and detected with a mass spectrometer.

The instrument extracts circular zones or zones in the form of a TLC-MS plate, e.g. with methanol or any other solvent using the constant flow speed of the HPLC-MS system. In the presence of the solvent head is drawn into the help of a laser pointing device or according to the control by the TLC Scanner or TLC Visualizer. After extraction is transferred online into the mass spectrometer. After the elution head is cleaned automatically.

Document Technical 20 200, 1-02



RECOMMENDED SYSTEMS FOR MORE DEMANDING TASKS

An HPLC system for more demanding tasks consists of at least one instrument for the sample application, chromatogram development, and evaluation. Other steps are covered by a basic kit (left page) and by other CAMMAG products, depending on the task and the sample to be analyzed. Let us make some recommendations.

 Lineromat 1 Sample application for sample application	 ARC2 Reproducible chromatogram development	 TLC Scanner Reproducible evaluation	 TLC Visualizer Image documentation
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E22.8215 HPLC System for quantitative analysis including evaluation with TLC Scanner and image documentation, including WinCATS software for control of instruments, software options according to application, see page 35-37, 40, 41. Suitable for laboratories dealing with few samples.

 Lineromat 1 Sample application for sample application	 ARC2 Reproducible chromatogram development	 TLC Scanner Reproducible evaluation	 TLC Visualizer Image documentation
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E22.8215 HPLC System for quantitative analysis including evaluation with TLC Scanner and image documentation, including WinCATS software for control of instruments, software options according to application, see page 35-37, 40, 41. Suitable for laboratories with high sample throughput.

 Lineromat 1 Sample application for sample application	 ARC2 Reproducible chromatogram development	 TLC Visualizer Image documentation	 WinScan Image evaluation
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E22.8300 HPLC System for qualitative and quantitative analysis based on image documentation and evaluation, including WinCATS software for control of instruments and WinScan, software options according to application, see page 35, 37, 40, 41. Suitable for laboratories dealing with few samples.

Ordering information

Ordering information for these kits can be found on our website www.cammag.com.

Note

Please note that disposable items such as pre-coated plates and disposable capillary pipettes as well as developing chambers only get you started.

Complete Systems 42 | 43

Wincats 1.4.5

- Connecting the New Scanner to Wincats
- Compatible with Windows 7 and XP (32bit)
- Various Bugfixes
- New features in Comperison Viewer

CBS 105 out soon!

CBS
CAMAG BIBLIOGRAPHY SERVICE



AMD-Chromatogramm von Stratum corneum Lipiden

HPTLC vielseitig – in dieser Ausgabe
Beiträge von Bioanalytik bis Nachweis
von Schadstoffen in Wasser

CAMMAG 105

CAMAG LITERATURDIENST PLANAR-CHROMATOGRAPHIE CBS 105 • September 2010