

## Liquid Extraction Surface Analysis - LESA

Combining the Ease and Speed of Direct Surface Analysis with the Power and Soft Ionization of Chip-based Nanoelectrospray Mass Spectrometry

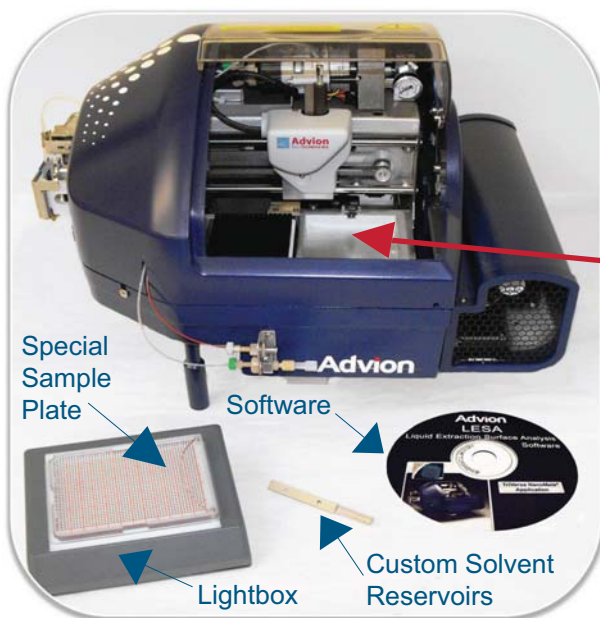
**Simultaneously identify drugs and their phase I & II metabolites directly from tissue samples.**

The TriVersa NanoMate® now has a sampling mode capable of extracting samples directly from a variety of surfaces for analysis by infusion through the high performance nanoelectrospray ESI Chip®. This new mode of analysis is in addition to the already well-established methods of NanoMate operation: zero carry-over infusion, chip-based LC/MS coupling, and fraction collection.

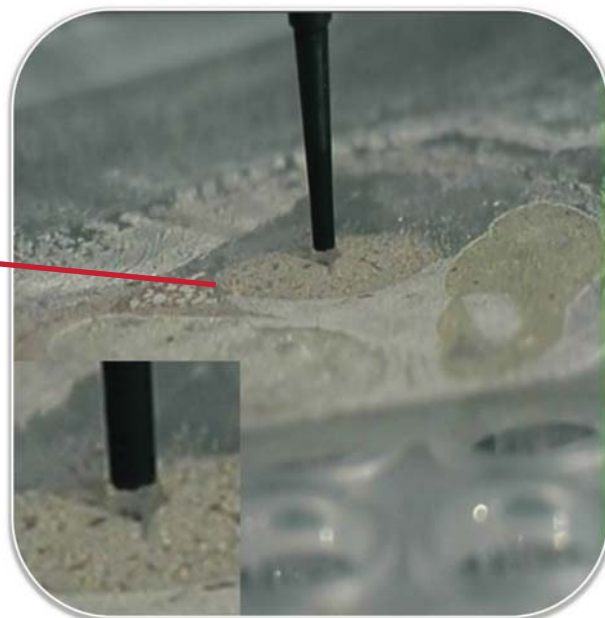
Use the TriVersa NanoMate to sample directly from:

- **Thin tissue sections**
- **Dried blood spots on paper**
- **MALDI plates for complimentary information by ESI**
- **TLC plates and other planar separation media**

***This technique has a wide range of applications for both small and large molecules.***



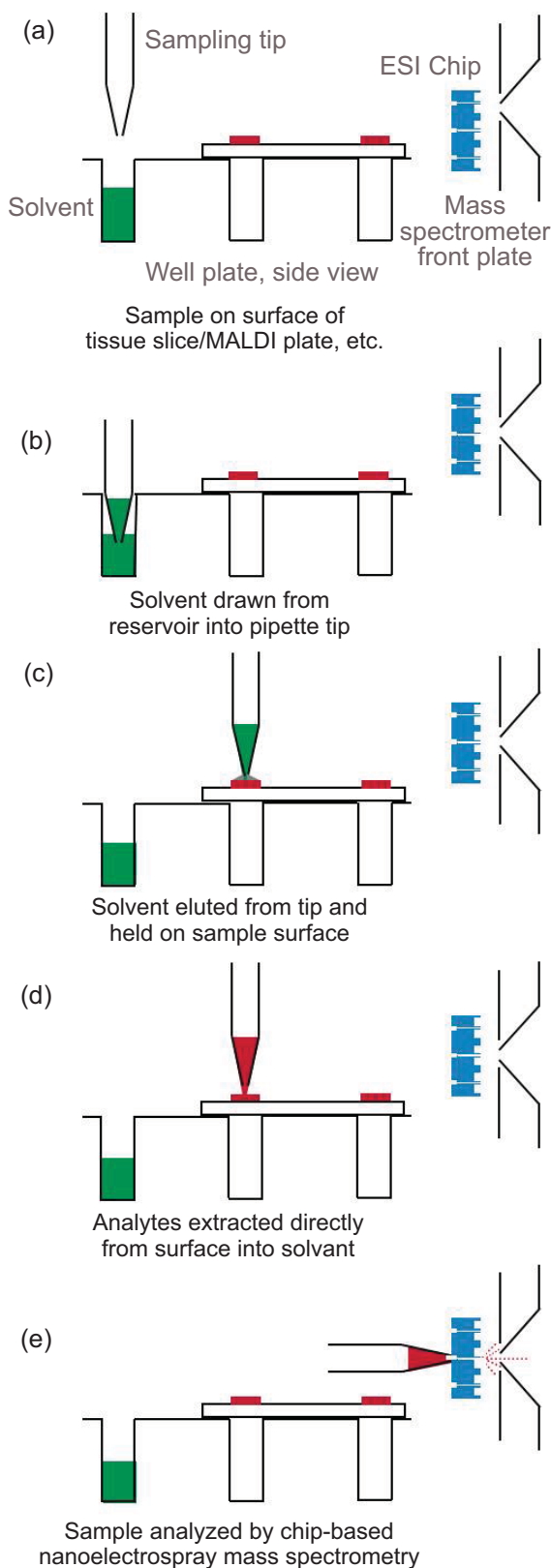
LESA kit (software, custom solvent reservoirs, special sample plate, lightbox, and TriVersa NanoMate)



Surface sampling of thin tissue section via LESA and the TriVersa NanoMate

Surface Analysis

**LESA - How It Works**



The technique, developed by Gary Van Berkel and Vilmos Kertesz at Oak Ridge National Laboratory\*, brings extraction solvent from a pipette tip into contact with the surface of a sample held in the sample plate of an Advion TriVersa NanoMate. Analyte is extracted from the surface, then the solvent is retracted back into the pipette tip and sprayed through the ESI chip in the normal manner.

**Simple and very effective.**

The LEESA capability is available as an upgrade kit to existing TriVersa NanoMate users or as part of a new TriVersa NanoMate system. This new analytical technique is enabled by the LEESA software which provides simple, method-driven, surface analysis. This software has enhanced control features allowing the ability to choose a sampling position within 90  $\mu\text{m}$  resolution and fine control of the syringe pump speed to ensure aspirate/dispense droplet accuracy. The kit also provides two 1 mL reservoirs for the extraction solvent, and a special sample plate holder with integral grid and lightbox to help identify sampling position.

Contact us for more details at [info@advion.com](mailto:info@advion.com).

\*Fully automated liquid extraction-based surface sampling and ionization using a chip-based robotic nanoelectrospray platform. Kertesz, V.; Van Berkel, G.J. *J Mass Spectrom.* **2009 Dec 17**. [Epub ahead of print]

Improving the Performance of Mass Spectrometry with the TriVersa NanoMate, the latest in chip-based electrospray ionization technology from Advion. The TriVersa NanoMate combines the benefits of liquid chromatography, mass spectrometry, fraction collection, chip-based infusion and **Liquid Extraction Surface Analysis** into one integrated system.