

"Advion's technology is being used in pharmaceutical companies, universities, and biotechnology companies around the world for a variety of applications. Users have cited the technology in hundreds of peer reviewed publications and conference presentations since 2002."

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"Advion's technology has provided me with a robust and reliable platform to perform my research. Additionally, the stability of the nanoelectrospray and reduced need for a lot of sample makes using the system a lot easier than my previous methods."

- TriVersa NanoMate User

Advion



TriVersa NanoMate®

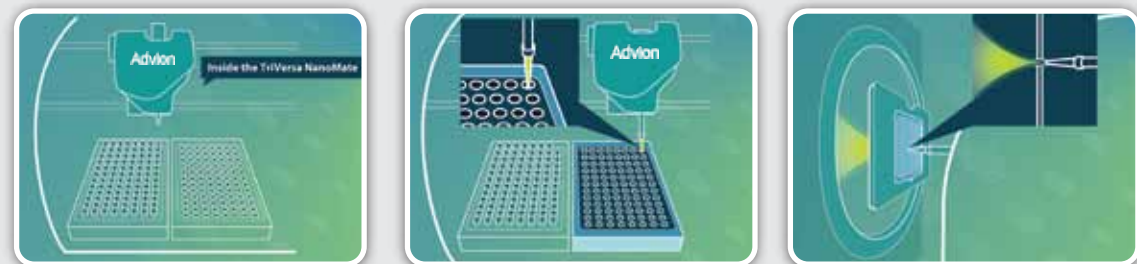


The TriVersa NanoMate is the latest in chip-based electro spray ionization technology from Advion. It combines the benefits of liquid chromatography, mass spectrometry, chip-based infusion, fraction collection, and direct surface analysis into one integrated system. It allows analysts to obtain more information from complex samples than with LC/MS alone.

TriVersa NanoMate®
More Information from Complex Samples

Advion BioSystems is a wholly-owned subsidiary of Advion BioSciences, Inc.

MODE ONE – CHIP-BASED INFUSION



Pipette tips and samples are located inside the TriVersa NanoMate. The instrument first picks up a pipette tip.

Then it aspirates a sample from the 96- or 384-well plate.

The sample-loaded pipette tip seals to the back of the ESI Chip, voltage and pressure are applied, and electrospray ionization occurs.

Typical applications of chip-based infusion:

- Protein Identification
- Noncovalent Interactions
- Lipid Analysis

Benefits of chip-based infusion:

- Zero sample-to-sample carryover
- Long, stable spray times
- Automated nanoelectrospray

MODE TWO – LC/MS WITH SIMULTANEOUS FRACTION COLLECTION



The TriVersa NanoMate connects with the HPLC and mass spectrometer for LC/MS analysis.

Fractions are simultaneously collected during an LC/MS analysis.

Fractions of interest are analyzed by chip-based infusion.

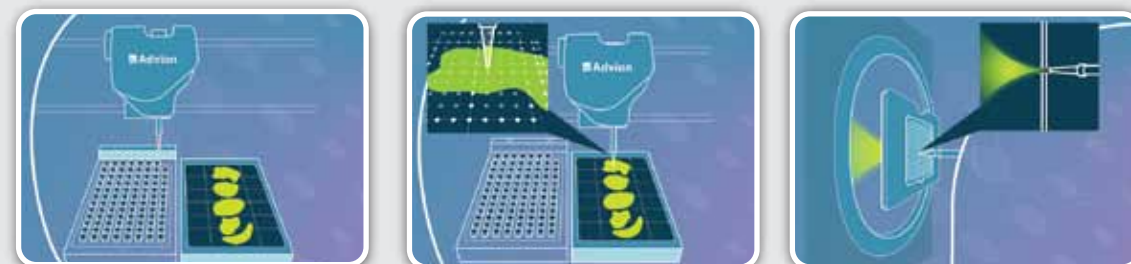
Typical applications of LC/MS, fraction collection, and chip-based infusion:

- Metabolite Identification
- Protein Biomarker Discovery
- QA/QC Antibodies
- Post-translational Modifications
- Top-down Proteomics

Benefits of LC/MS, fraction collection and chip-based infusion:

- More time across an LC/MS peak for more information from complex samples
- Integration with RAD detectors, external fraction collectors, and UV detectors for increased capability
- Qualitative and quantitative information with a single LC/MS run

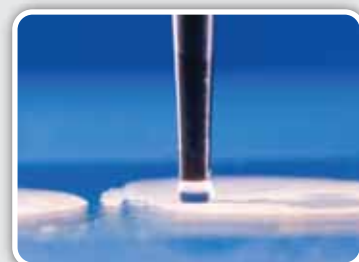
MODE THREE – LESA™ (LIQUID EXTRACTION SURFACE ANALYSIS)



The TriVersa NanoMate picks up a pipette tip from the rack, then takes the extraction solvent from the reservoir into the pipette tip.

It brings the extraction solvent from a pipette tip into contact with the surface of a sample held in the sample plate. The analyte is extracted from the surface.

Then the solvent is retracted back into the pipette tip and is sprayed through the ESI Chip in the normal manner.



Use the TriVersa NanoMate to sample directly from:

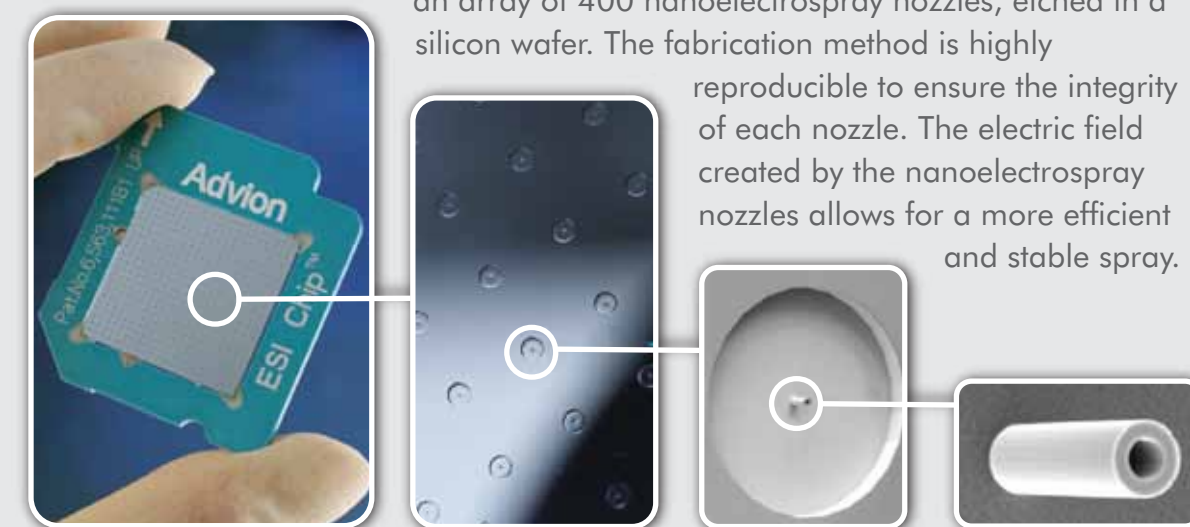
- Thin tissue sections
- TLC plates and other planar separation media
- Dried blood spots on paper
- MALDI plates for complementary information by ESI
- Any surface with extractable analytes



Benefits of LESA:

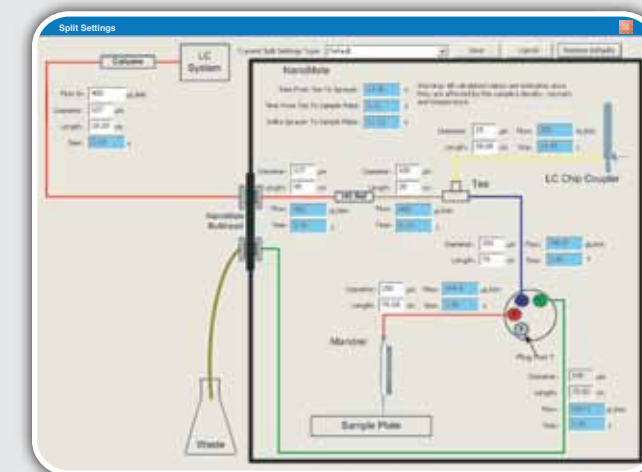
- See more analytes with better sensitivity
- Fast. Simple. Direct.

THE ESI CHIP®



The ESI Chip unleashes the power of mass spectrometry through miniaturization. This microfluidics chip contains an array of 400 nanoelectrospray nozzles, etched in a silicon wafer. The fabrication method is highly reproducible to ensure the integrity of each nozzle. The electric field created by the nanoelectrospray nozzles allows for a more efficient and stable spray.

SOFTWARE AND OPTIONS



ChipSoft™

The TriVersa NanoMate is operated using a proprietary software program called ChipSoft. It is used to set all parameters of system operation including sample volumes, sample flow rates, temperature, and spray times.

Spray Sensing:

- In the event of a spray failure, the instrument automatically moves to the next available nozzle. This process happens within three seconds.

External Collector Synchronization (ECS):

- For radioactive metabolite identification and high-capacity fraction collection.