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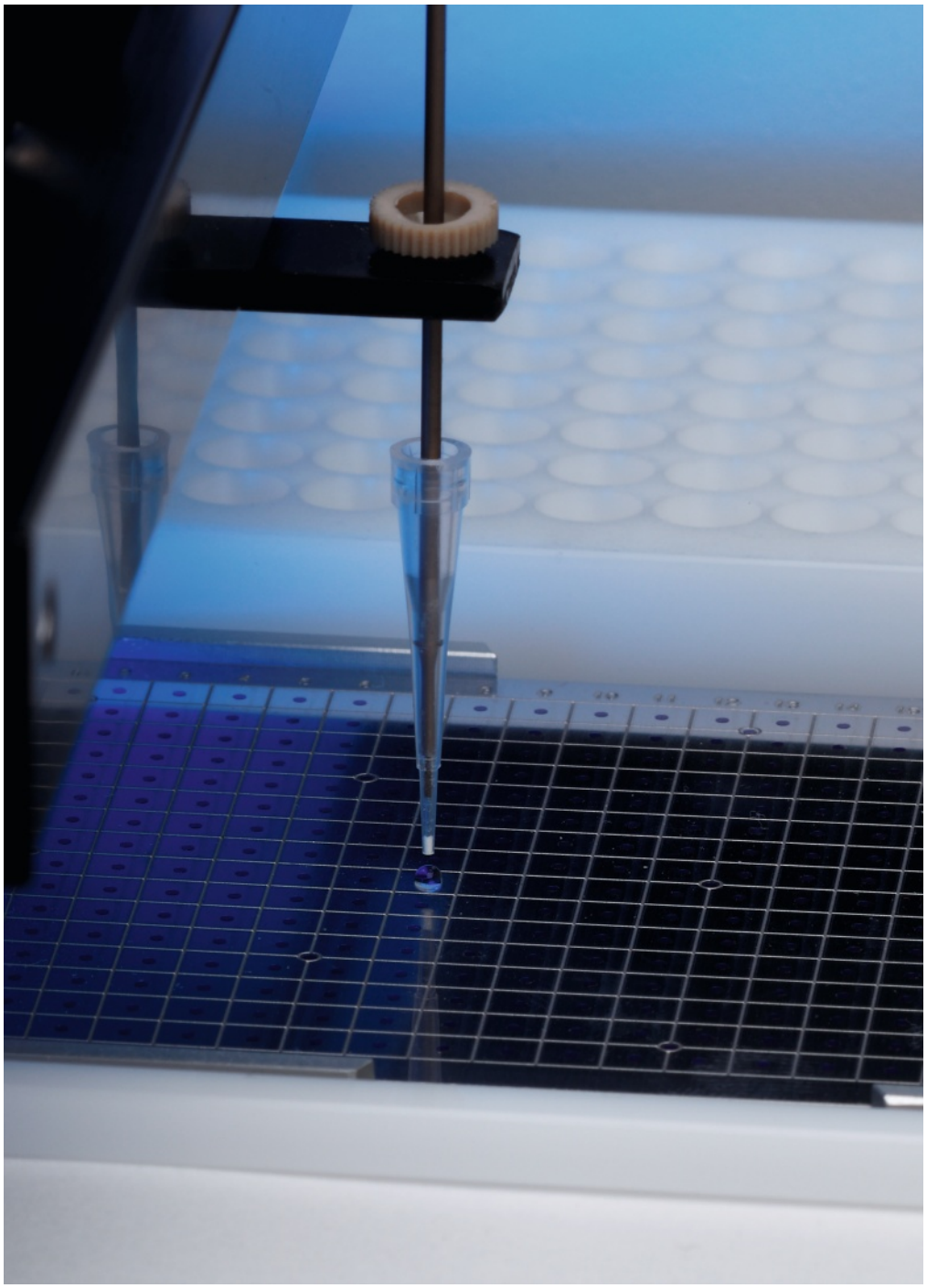
Bioanalytical Instruments

DigestPro MSi

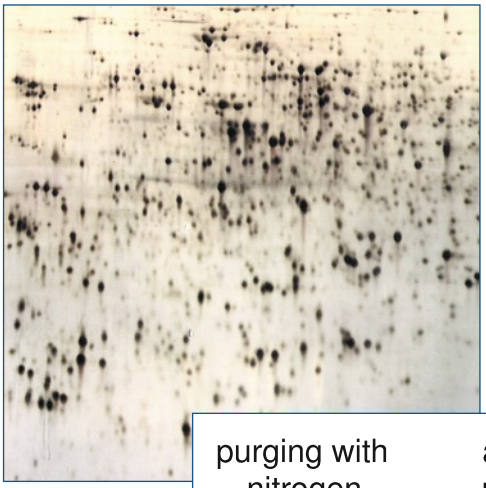
Dedicated to Performance in Protein Research

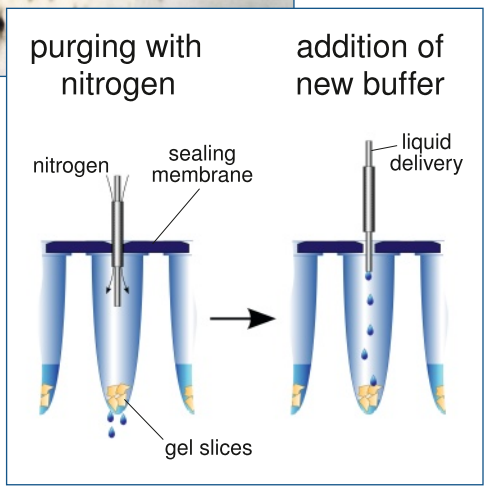


Automated protein digestion and MALDI sample preparation

Protein digestion is a routine but essential step in protein analysis which must be automated for high reproducibility and sensitivity. INTAVIS now introduces the ***DigestPro MSi***, a dedicated instrument for sample preparation in proteome research. It automates in gel and solution digest procedures including reduction, alkylation, silver reduction and all washing steps. The peptide solutions obtained are then processed on the same platform for mass spectrometry by either MALDI or LC-MS.

- Digestion and MALDI sample preparation on one platform
- Optimized to process a few or up to 96 samples per run
- Easy to use and reliable
- Compact





Digestion in gel or in solution

Gel slices are loaded into a reaction plate with tiny holes in the 96 well bottoms. Holes in a covering membrane allow for reagent delivery or purging by a specially designed dispensing needle. This positive pressure principle eliminates contamination and loss of gel plugs, as the needle never touches gel pieces or digest solution. Solutions can be incubated at elevated temperature as required by the protocol. At the end of the run the peptides generated are extracted from the gel and collected in a clean plate for further work-up.

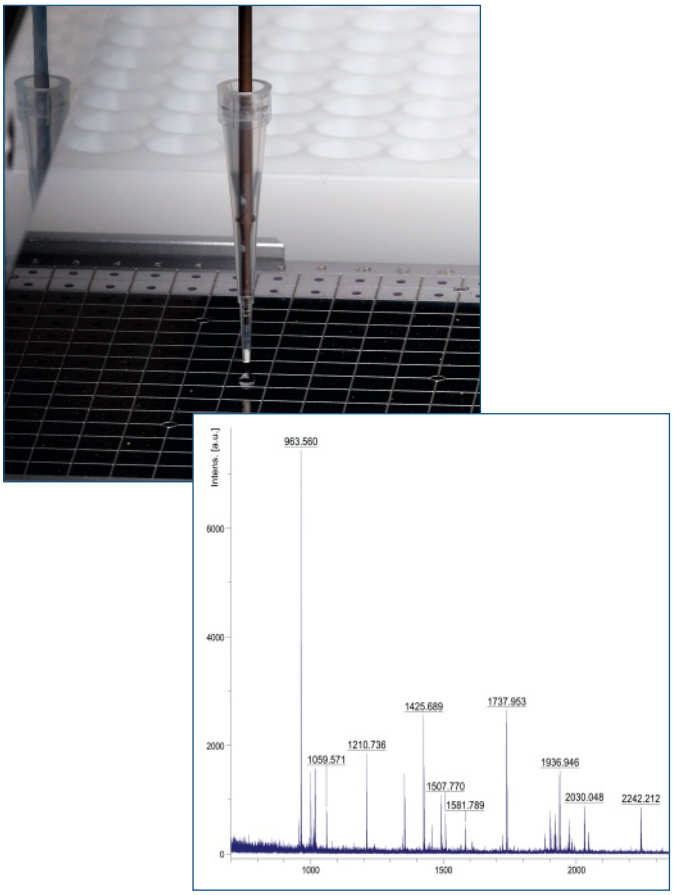
- Valveless flow-through reaction vessels
- Protection from contamination
- Dedicated to sensitive protein digestion

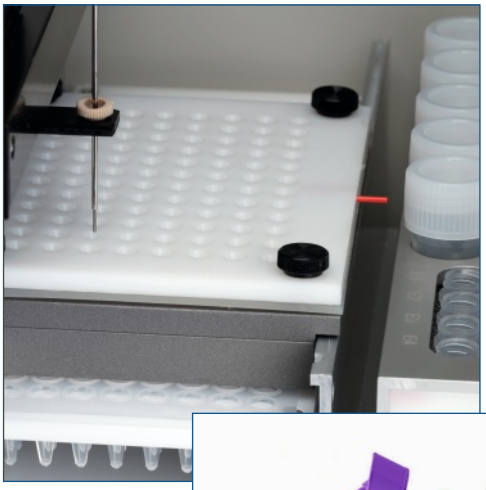
The ***DigestPro MSi*** can also be used to perform protein digestion in solution. If very dilute or salty protein solutions must be treated, our solid-phase assisted digestion on ZipTips™ is a unique approach.

MALDI sample preparation

The ***DigestPro MSi*** automates numerous MALDI sample preparation protocols such as direct transfer, sandwich preparation, affinity enrichment on matrix anchors and on-target washing. The most robust protocol uses reversed phase tips for concentration and desalting. Automated handling of ZipTips™ (™ of Millipore Corp.) is much more elegant and efficient than their manual use as flow rates, volumes and flow direction can be perfectly controlled.

- Reliable pipetting of sub-µl volumes
- Desalting and concentration on ZipTips™
- Loading on all MALDI targets in the market
- Transfer into autosampler vials





More applications

The highly flexible software allows the use of different enzymes, reductive destaining of silver gels, isotopic labelling of peptides as well as other chemical reactions on specific amino acids. The MALDI sample preparation procedure can be used for other types of affinity purification or for solid-phase assisted digestion of soluble proteins loaded on ZipTips™. Phosphopeptides are enriched on TiO_2 beads or metal chelate ZipTips. Affinity labelled peptides from complex digestion mixtures can be purified with appropriate affinity matrices prior to deposition onto MALDI targets.

- Solid-phase assisted digestion
- Phosphopeptide enrichment
- Immunoaffinity protocols
- Labelling reactions

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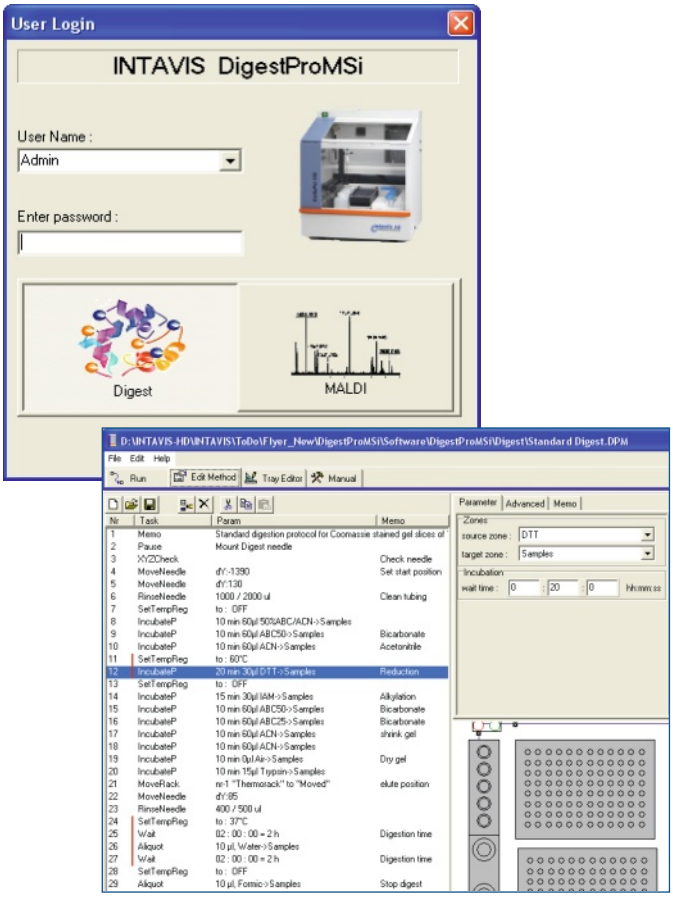
Intuitive operation software

The ***DigestPro MSi*** is operated from Windows™ based software on a standard PC. The graphical user interface shows the work area and all operations during the run in real time. Standard protocols for several digestion and MALDI sample preparation routines are provided. They also serve as templates for user-defined protocols as the methods evolve.



- Graphical user-interface
- Administrator and User level
- Field-tested template protocols
- Access to all parameters
- Real-time display of instrument operation
- Log file with detailed documentation on each run

Specifications

Number of samples per run:	up to 96
Operating range:	from low fmol range, depending on MS analysis
Reagents and buffer vials:	23, 4 cooled positions
Volumes delivered:	5 - 100 µl (digestion), 0.5 - 100 µl (MALDI)
Gel volume:	1 mm^3 to 30 mm^3
MALDI target geometry:	any current target adaptable
Reagent cooling:	four cooled reagent positions
Heating range:	up to 80 °C
Approximate run time:	Digestion 8 - 10 h, MALDI prep 1 - 4 h
Documentation:	log protocol on PC
Operation:	PC with graphical software under Microsoft Windows™
Cabinet	Filtered air inlet and vented exhaust outlet
Power:	220/240 V, 50 Hz or 110/115 V, 60 Hz, 250 Watt
Dimensions:	57 x 50 x 70 cm (width x depth x height) [22.4 x 19.7 x 27.2 inches]
Weight:	60 kg