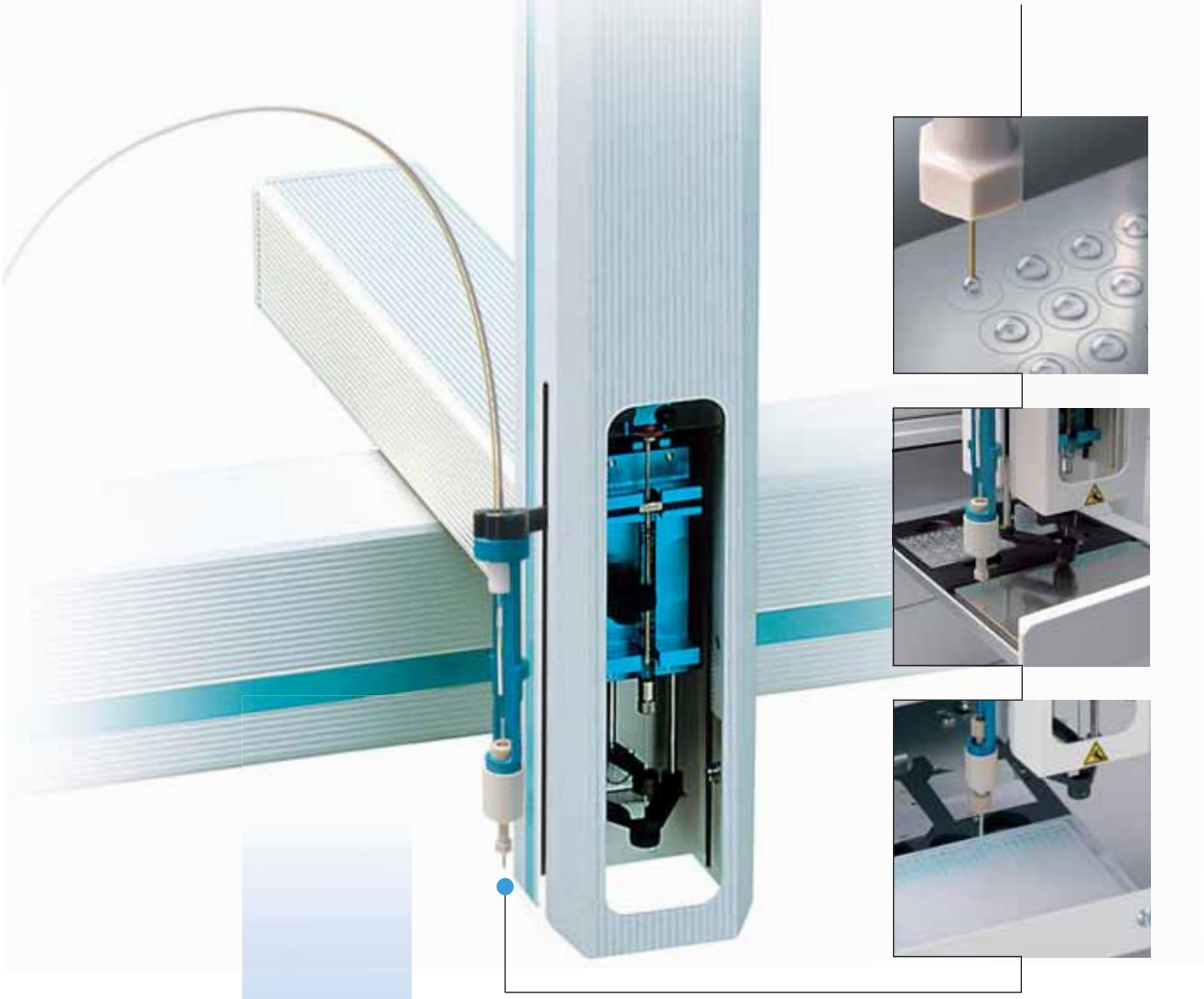
MALDI Spotter Option

Interfaces with any major LC/LC-MS System

On-line Fraction Collection to MALDI Targets or Microplates



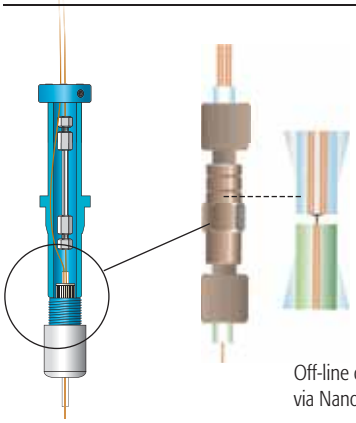
Drug Discovery

- **Nano- and microflow Applications**
- **Proteine Biomarker Discovery**
- **Peptide Separations**
- **Metabolite Identification**

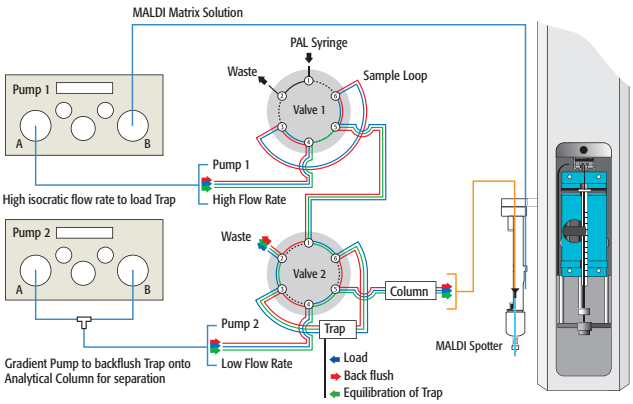
- Nano, capillary and microbore LC coupled with fraction collection onto MALDI targets or microplates
- Single device for LC separation, fraction collection and re-injection of collected fractions
- Accommodates column sizes down to 75µm and flow rates up to 300µl/min
- Upgradeable to any existing HTC PAL or HTS PAL
- All major MALDI Target vendors supported
- Optional on-line matrix addition via Nano Y-connector

PAL MALDI Option mounted on a HTS PAL

Fraction collection into 384 microplate



Off-line or on-line matrix addition
via Nano Y-connector



Sample injection, enrichment, separation and spotting onto MALDI Target

Rapid and accurate identification and quantification of proteins is one of the goals of todays proteomics research. One key requirement for this approach is the ability to resolve the individual components of peptide mixtures prior to MS analysis. The challenge is to achieve high sensitivity with limited sample amount. This requires equipment that is specifically designed for separation at low flow rates and that allows the collection of small fraction volumes, even on MALDI targets.

The micro collection/spotting system PAL MALDI Option meets this challenge. It is an ideal tool for single or multidimensional chromatographic separation of complex peptide and protein mixtures for subsequent analysis by MALDI and/or ESI mass spectrometry. The offline combination of LC separation with MALDI MS analysis gives scientists significant advantages over the widespread online ESI/MS approach. LC/MALDI "freezes" the LC separation on the MALDI plate and allows MS/MS experiments without any time constrains. Intelligent decisions can now be made during analysis, allowing results-driven analysis without rerunning the sample. Decoupling the separation from the analysis gives the opportunity to optimize the separation performance and the total sample throughput.

Flexibility for LC/MALDI spotting on various target types from different vendors as well as collection into well plates (96 and 384). Probe positioning control of 0.1mm enables reproducible and robust collection of small fraction volumes from nl to the lower µl range. Matrix addition can be done either offline or online by premixing the matrix with the eluent. A Peltier cooling option prevents thermal decomposition and evaporation of the micro fractions. Intelligent hardware design guarantees lowest delay volumes down to a few nl to achieve optimal chromatographic resolution.

All major MALDI targets supported

Specifications PAL MALDI Option

Compatible PAL instruments
HTS PAL / HTC PAL

Fraction vessel capacity
HTS PAL 23 MTP or 11 Deepwell or 594 2ml vials (96 and 384 wells)
HTC PAL 11 MTP or 5 Deepwell or 270 2ml vials (96 and 384 wells)
(optional cooling to 4°C available)

MALDI Target Capacity
up to 46 depending on PAL instrument type and target vendor

Spotting Tip
Hydrophobic coated fused silica capillary

Spotting frequency
min. 3 seconds (20 spots per minute)

Delay volume
approx. 3µl with 1 meter PEEK Tubing ID 65µm (column in LC system)
approx. 10nl if column is installed inside MALDI Tool
(* lower delay volume requires tubing ID <65µm)

Flow Rate
20nl - 300µl

Transfer tubing kit
PEEK tubing ID 65µm / OD 1/16 inch
PEEK Nano Y-connector for 2 pcs. 360µm capillary tubing

Software control
Cycle Composer 1.5.3 or higher*
PAL Firmware 3.0 or higher
(*including example macros for Injection, Fraction Collection and Spotting)

Wetted Parts
All liquids compatible with PEEK, Fused Silica

Supported Targets
Bruker Daltonics, ABI/Sciex, Waters, Agilent

..CTC ANALYTICS
Where design meets performance

CTC Analytics AG
Industriestrasse 20
CH-4222 Zwingen
Switzerland
Tel: +41 61 7658100
Fax: +41 61 7658199
E-mail: info@ctc.ch
Web: www.ctc.ch