Automated sample preparation for mass spectrometry

Solid phase extraction, liquid-liquid extraction and protein purification solutions
Had enough of tedious manual sample preparation?

Although there have been monumental advances in mass spectrometry (MS) instrumentation in recent years, its unglamorous counterpart, sample preparation, has not enjoyed the same rate of development. Sample preparation has become a major bottleneck, and the issues associated with manual processing have hindered errors, thus lowering overall productivity. Tecan’s automated SPE workstation alleviates these problems, allowing you to focus on more important issues – your results.

Tecan brings you end-to-end process automation

**Solid phase extraction (SPE)**
- Despite its widespread use for sample purification prior to liquid chromatography-mass spectrometry (LC-MS), manual SPE is cumbersome, time consuming and prone to manual errors, thus lowering overall productivity. Tecan’s automated SPE workstation alleviates these problems, allowing you to focus on more important issues – your results.

**Liquid-liquid extraction (LLE)**
- Tecan’s LLE workstation offers a versatile and totally automated solution for purification of diverse chemistries such as 25-Hydroxy vitamin D, pesticides etc. With unparalleled precision and unmatched configurability, Tecan has a solution for your most challenging solvent extractions for downstream LC-MS analysis.

**Protein purification**
- Biomarker research and the pharmaceutical industry’s growing interest in biologics have made protein analysis routine in many laboratories. Tecan, with its extensive partnership agreements, offers a broad portfolio of protein purification solutions, allowing you to focus on downstream LC-MS analysis while your workstation seamlessly performs the most cumbersome digestion and/or purification tasks.
Automated SPE is a major requirement across all segments of the pharma, forensics, food, clinical and bioanalysis industries.

- **Flexibility**: a unique choice of both air and liquid displacement technology
- **Productivity**: perform parallel SPE extractions in 96-well plates. Independent arm movements allow parallel processing and maximum speed
- **Quality by design**: built-in process security features meet the most stringent quality requirements

Automated LLE for fast, robust and safe analyte purification and quantification.

- **Safety**: automation reduces operator exposure to organic solvents
- **Reliability**: high precision liquid handling enables consistent results, irrespective of the operator
- **Cost Reduction**: lower solvent use offers a ‘green’ and economical solution

Automated protein digestion for maximum peptide recovery and assay throughput.

- **Contamination-free**: silicone-covered labware, piercing tips and unique gel-digest sandwich prevent contamination
- **Robust**: with end-to-end process automation you achieve the same results, first time, every time
- **Freely configurable**: special heating/cooling devices and various workflow options mean that your every need is met

The uptake of MS innovation in the life science industry. To help overcome this, Tecan offers Freedom EVO®-based end-to-end process automation for even the most challenging protocols, liberating you from the bottleneck of manual sample preparation.
Affinity purify proteins in your preferred formats prior to LC-MS or MALDI-MS (matrix-assisted laser desorption ionization-MS).

Miniaturized column chromatography (Figure 1)
- Atoll MediaScout® RoboColumn (50-600 μl media) – standard and customized media
- GE PreDictor™ RoboColumn (50-600 μl media) – GE standard media

Parallel screening in batch format (Figure 2)
- GE PreDictor™ filter plates (2-20 μl media) – GE standard media
- Other SBS format filter plates for vacuum or centrifuge extraction

High throughput with resin filled tips (Figure 3)
- PhyNexus PhyTip® column (5-320 μl media) – standard and customized media
- Operate with 8-channel Liquid Handling Arm or MultiChannel Arm™

Selected citations

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Tecan’s service and training products are designed to ensure your system’s productivity. Our global network of certified field service specialists delivers a high level of support when you need it. Services are provided through a range of TeCare Service Contract Options or on demand.
Empowering users through training ensures maximum productivity from Tecan products. Tecan delivers trainings to meet the needs of diverse users through classroom, onsite, and online settings.

For more information, please visit www.tecan.com/lcms or contact your local Tecan sales representative.

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