



## MIP [ 4 ] SPE™

Selective Extraction  
of Analytes from  
Complex Samples

# Increased Sensitivity and Efficiency with Molecularly Imprinted Polymers (MIPs)

*To strengthen your ability to extract analytes from complex matrices, MIP Technologies has developed proprietary products based on molecularly imprinted polymers. By using MIP Technologies' analytical product range you will be able to selectively extract a wide range of individual analytes or analyte classes. These standard solid-phase extraction products are available in various formats. Where standard products do not exist, custom designed MIPs can be developed.*

molecular recognition elements engineered to bind one target compound or a class of structurally related target compounds with high selectivity. Selectivity is introduced during MIP synthesis in which a template molecule, designed to mimic the analyte, guides the formation of specific cavities or imprints that are sterically and chemically complementary to the target analyte(s).

MIP Technologies specializes in developing MIP sorbents for analytical applications, such as solid-phase extraction (SPE) or LC and for selective extraction or separation of small molecules at the preparative or process scale.

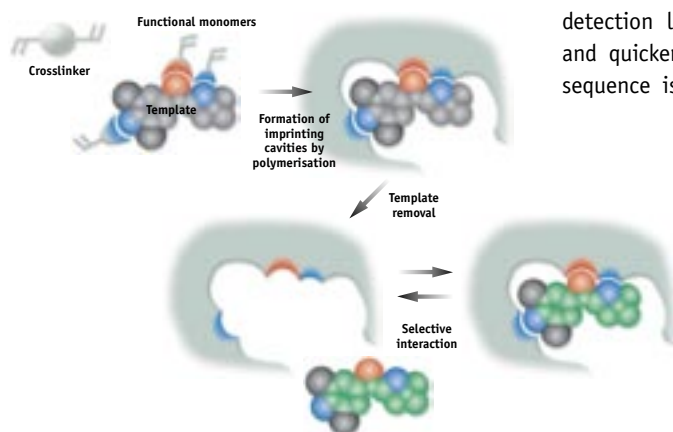
## Lower Detection Limits

By careful design of the imprinting site, either by molecular modeling, experimental design methods or screening methods, binding cavities can be engineered possessing a stronger interaction between the sorbent and the analyte(s) compared to conventional SPE materials. As a consequence, interfering substances can be washed away using harsher washing conditions during the SPE procedure. This leads to cleaner analyte extracts and lower chemical noise, resulting in lower detection limits, reduced sample volumes, and quicker analysis times. A further consequence is that the method development



## A Winning Technology

Molecularly imprinted polymers (MIPs) are a class of highly cross-linked polymer-based



*The basic principle of molecular imprinting*



will be less matrix dependent and where MS detection is used, ion suppression will be minimized due to the improved quality of the extracts.



### Simplified and Cost Effective

Sample preparation is often the rate-limiting step in analytical methods and its effectiveness has a critical impact on the overall efficiency. Due to the improved selectivity, a simplified extraction protocol with fewer

time-consuming labor-intensive steps can be employed, leading to a more cost effective process.

### High Stability

MIPs are highly cross-linked polymers with a high stability. They can be exposed to a wide variety of organic solvents, can withstand high temperatures and can be used over a broad pH range, without loss of selectivity. Furthermore, they can be stored at room temperature for prolonged times, an advantage compared to antibody based products.

### Quality Control

MIP Technologies works under stringent quality conditions. The company's well equipped QC laboratories ensure high product quality and low batch to batch variations. Physical and chemical characteristics of the MIP sorbents, column components and packaging are routinely checked.

### The MIP [4] SPE™ Product Family

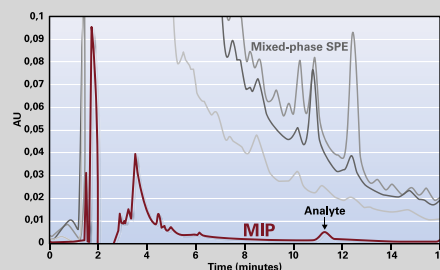
MIP Technologies offers analytical standard SPE products as well as custom designed SPE.

The MIP [4] SPE™ sorbents are optimized for the selective extraction of analytes (or analyte classes) from complex matrices. They are supplied in small scale pre-packed SPE cartridges, columns or pre-columns for LC/MS.

### Custom Designed SPE

Custom made MIPs for SPE can be prepared against virtually any analyte, or group of related analytes. Whether your problem is in the pharmaceutical, food, chemical or commodity industries or in the public sector monitoring and safety agencies, our custom SPE service can provide your extraction solution.

### Cleaner Extracts Leading to Lower Detection Limits



The chromatograms show the extraction clean-up of a typical analyte from a 5 ml urine sample. Superior clean-up with the MIP sorbent is shown in red, whereas the other chromatograms show clean-up with a much higher level of chemical noise, using mixed-phase SPE sorbents.

### MIP [4] SPE™ Benefits:

- Fast and efficient extraction
- Excellent selectivity
- Low detection limits
- High stability
- Minimised matrix effects
- Cost effective



## Unique Patents and Cutting Edge Research

MIP Technologies AB is an innovative biotechnology company working at the boundary between chemistry and material science. MIP Technologies is the pioneer in the commercial development of molecularly imprinted polymers (MIPs), holds important patents and maintains cutting edge research activities in the area. The company's mission is to provide innovative products based on molecular imprinting that serve industry's needs in analytical, preparative and process scale selective separations.

### Customer Support

MIP Technologies offers close customer support. You are welcome to contact our highly qualified staff about your demanding extractions. Furthermore we assist our customers, either directly or via our distributors, by providing advice on method development, SPE seminars and workshops as well as technical notes.

MIP Technologies AB  
P. O. Box 737  
220 07 Lund, Sweden  
Visiting Address: Scheelevägen 22  
Tel: +46 (0)46 16 39 00  
Fax: + 46 (0)46 16 39 01  
[www.miptechnologies.com](http://www.miptechnologies.com)



*a clean catch*