

Automated mycotoxin analysis

Improving quality of analysis through automation

- Increasing productivity through automation.
- Standardisation of methods and results.
- Improving work-flow, saving time and lowering overheads.



Introduction

IMMUNOPREP® ONLINE immunoaffinity cartridges are based on an innovative, patented technology. IMMUNOPREP® ONLINE cartridges are available for a range of mycotoxins and are used in conjunction with the RIDA®CREST or RIDA®CREST ICE handling systems to enable sample application and detection of mycotoxins automatically in a wide variety of food and feed matrices.

Automated handling system overview

RIDA®CREST and RIDA®CREST ICE are modular online cartridge handling systems which can be used with existing LC or MS detector and/or equipment to allow samples to be processed through the selected IMMUNOPREP® ONLINE cartridge for the mycotoxin of interest. Both devices are controlled using the Clarity™ software (included), or alternatively with the user's own software to enable the IMMUNOPREP® ONLINE cartridges to automatically loaded onto the system and the test sample applied. The cartridge is then transferred and positioned directly online with the chosen LC, UHPLC or MS prior to detection and quantification.

RIDA®CREST and RIDA®CREST ICE can process two cartridges simultaneously, while a sample is being applied to one cartridge the eluate from a second cartridge is being analysed and detected. This reduces time and increase sample throughput.

RIDA®CREST ICE is compatible with more than 90 % of HPLC, UHPLC and LC-MS/MS brands on the market.

RIDA®CREST system overview



System includes -

- Dual pumps
- Autosampler
- Column oven
- High pressure dispenser (HPD)
- Automatic cartridge exchanger (ACE)
- RIDA®CREST should be connected to a suitable detector (i.e. FLD, UV and MS) which is not included with the package

RIDA®CREST ICE system overview



System includes -

- High pressure dispenser (HPD)
- Automatic cartridge exchanger (ACE)
- RIDA®CREST ICE should be connected to a suitable LC system (i.e. FLD, UV and MS) which is not included with the package

Cartridge principle

IMMUNOPREP® ONLINE cartridges contain a monoclonal antibody specific for the mycotoxin of interest, coupled to a hydrophilic polymer that can withstand high pressure.

Following sample extraction and filtration, the test standards and sample are placed in an autosampler vial. The sample is then passed over the cartridge where any toxin present is retained by the antibody.

After washing, the cartridge is then placed online with

the HPLC column and the toxin is released following elution with mobile phase. Finally, the complete eluate is quantitatively analysed. The immunoaffinity cartridge offers highly specific, sensitive and rapid automated analysis. Each cartridge can be used online for up to 15 injections before it is automatically removed and replaced with a new one. This level of reuse is designed to offer optimum cartridge performance whilst maintaining a high level of quality.

IMMUNOPREP® ONLINE cartridges



Advantages of automated analysis to meet operational challenges

Advantages of RIDA®CREST automation	Supporting operational challenges
<ul style="list-style-type: none"> • Saves time <ul style="list-style-type: none"> • Less labour per sample • Increases sample throughput 	<ul style="list-style-type: none"> • Capacity to grow business without increasing costs • Increases the processing capacity of the lab without the need to recruit more staff or increase working hours
<ul style="list-style-type: none"> • Improved efficiency <ul style="list-style-type: none"> • System can run overnight • Increasing sample throughput 	<ul style="list-style-type: none"> • Increasing productivity • Customer results are reported sooner • More time to develop new business opportunities
<ul style="list-style-type: none"> • Accuracy / Better reproducibility & repeatability <ul style="list-style-type: none"> • Accurate loaded sample volume • Accurate elution at defined flow rate and time 	<ul style="list-style-type: none"> • Improves quality of the end result • Increases confidence in analysis • Samples run consistently reducing errors and variability
<ul style="list-style-type: none"> • Quality assurance and traceability <ul style="list-style-type: none"> • Each cartridge can be quality controlled with standard or QC sample • Each sample is traceable to a specific cartridge 	<ul style="list-style-type: none"> • Improvements and compliance with ISO 17025 • Increased reliability and confidence in results
<ul style="list-style-type: none"> • Standardisation <ul style="list-style-type: none"> • Robust methods which are comparable between R-Biopharm immunoaffinity columns and cartridges 	<ul style="list-style-type: none"> • Reliability and reproducibility of results and methods • Easier transfer and comparison of methods and results between sites using R-Biopharm immunoaffinity columns and cartridges
<ul style="list-style-type: none"> • Platform technology <ul style="list-style-type: none"> • Pre-programmed methods make the system easy-to-use • Easy to introduce new applications and future products 	<ul style="list-style-type: none"> • Minimal training required when validating new applications • Improving work-flow within the laboratory • Optimising equipment capacity, speeding up return on investment
<ul style="list-style-type: none"> • Cost reduction <ul style="list-style-type: none"> • Reduced labour costs • Reduction in consumable costs and solvent usage • Lower waste disposal and freight costs 	<ul style="list-style-type: none"> • Lowering operational costs • Improved profit margins • Giving a competitive advantage

Products Available

Art. No.	Product	48 cartridge pack	96 cartridge pack	For use with FLD-HPLC	For use with UV-HPLC	For use with LC-MS/MS
Cartridges						
P900/48 P900	IMMUNOPREP® ONLINE AFLATOXIN	✓	✓	✓		✓
P901/48 P901	IMMUNOPREP® ONLINE OCHRATOXIN	✓	✓	✓		✓
P902/48 P902	IMMUNOPREP® ONLINE DEOXYNIVALENOL	✓	✓		✓	✓
P903/48 P903	IMMUNOPREP® ONLINE ZEARALENONE	✓	✓	✓		✓
P904/48	IMMUNOPREP® ONLINE AFLATOXIN M1	✓		✓		✓

Coming soon!

New!

Art. No.	Product	Description
Automation		
ZRIDACREST2000	RIDA®CREST	Online handling system to be used in conjunction with IMMUNOPREP® ONLINE cartridges (excluding detector)
ZRIDACREST1500	RIDA®CREST ICE	Automated Cartridge Exchange and High Pressure Dispenser units to be used in conjunction with the IMMUNOPREP® ONLINE cartridges (excluding LC system)

Product Support

- Installation of RIDA®CREST and RIDA®CREST ICE handling systems.
- Assist with on-site method validation.
- Provide in-house or on-site training on the RIDA®CREST and RIDA®CREST ICE equipment and associated software.
- Provide bespoke applications for customer matrices which are accordance with legislation.
- Technical support and advice through a dedicated channel.



IMMUNOPREP® ONLINE Cartridges

Available in packs of 48 or 96



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