Restricted Access Media (RAM) DIrect Injection HPLC Columns

Rapidly Separate Small Molecules from Biological Matrices

HPLC and LC-MS analysis of small molecules contained within a biological matrix can be a difficult and time-consuming task. The analysis often involves multi-step pretreatment procedures including centrifugation, extraction and filtration. Restricted Access Media (RAM) Direct Injection columns separate small molecules in the presence of much larger analytes without extensive sample pretreatment. You can, therefore, directly inject a variety of complex sample matrices without prior sample clean-up for the separation and detection of drugs, drug metabolites, peptides and other analytes.

Advantages

- **Eliminates multiple sample pre-treatment steps:** RAM Direct Injection reduces the number of steps for sample preparation
- **Use for variety of sample matrices:** Efficient in the analysis of drugs, drug metabolites, peptides, and other analytes in matrices such as plasma, serum, whole blood, urine, plant and tissue extract, food and beverage, and environmental samples
- **Compatible with automated sample processing:** HPLC columns allow for automation, making it possible to process many samples at once
- **Reduces potentially dangerous sample handling:** Sample handling is significantly reduced, reducing the workers' exposure to dangerous samples such as plasma, serum, urine and environmental samples
- **Reduces of biohazardous waste:** RAM Direct Injection columns limit the creation of unnecessary biohazardous waste eliminating SPE disk waste
- **Lowers cost:** Because of the benefits described above, RAM Direct Injection often offers the lowest cost solution

REGIS® TECHNOLOGIES, INC.

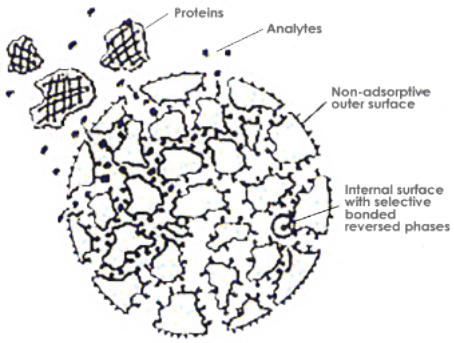
RAMColumns

RAM'sInternal Surface ReversePhase(ISRP)material was created specifically for the direct analysisof drugs in serum without extensive sample preparation. The result was a new phase that allows for chromatographic separations without interference by protein adsorption. The efficacy of the GFFII phases has been demonstrated in a variety of applications, including the study of drugs, their metabolites, and the resolution of peptides.

RAM ISRPStructure

Continuing product improvement efforts resulted in the development of the ISRPGFF II, a second generation phase with an improved bonding processthat resulted in the following improvements:

- Increased sample retention
- Higher column efficiency
- Greaterbatch-to-batch reproducibility



Rigid porous hydrophilic particle

Optimizing Selectivity

Many variables can affect the selectivity of the ISRPphase,including:

- Mobile PhaseComposition: The nature of ISRPanalytes requires that mobile phasesconsistof a buffer with varying degrees of modification. Modifiers can include acetonitrile, methanol, isopropanol, and tetrahydrofuran.
- Caution:too much modifier can result in matrix precipitation.
- pH: The pH of the mobile phase can be controlled to avoid protein denaturing and to enhance selectivity. The pH range of the column is between 2.5 and 7.5; however, within the optimal pH range of 6.0 to 7.5, both the proteins and the glycine outer surface take on a negative charge. As a result, negatively charged proteins are repulsed by the outer phase, and pass quickly through the column.
- Temperature: Separations can also be optimized by varying column temperature. Lower temperatures have been shown to result in increasedretention and selectivity.

ISRP	Dimensions	CATal o g #
Pinkerton, GFFII	5 cm x 2.1 mm	1-731469-300
Pinkerton, GFFII	5 cm x 4.6 mm	1-731470-300
Pinkerton, GFFII	15 cm x 4.6 mm	1-731471-300
Pinkerton, GFFII	25 cm x 4.6 mm	1-731472-300
Guard Replacement, GFFII	N/A	1-731474-300
Guard Replacement Kit, GFFII	10 cm x 3 mm	1-731475-300

Contact us to learn more about RAM'sISRPcolumns and other RAM products.

JASCO FRANCE SAS
17 rue des Cerisiers
91090 LISSES
www.jascofrance.fr
Tél : 01.64.97.09.60