

SAMPLE PREPARATION: Filtering samples prior to analysis



Ion exchange columns for amino acid analysis are well known for their resistance to a wide range of chemicals and for their long lifetime. If contamination of the resin occurs during use, it is usually due to materials from the sample matrix accumulating on the resin over time. Precautions during sample preparation can avoid this problem and ensure a prolonged column life.

Introduction

Due to their high degree of mechanical strength and chemical inertia, Biochrom columns are suitable for virtually any type of samples which can be analysed for their amino acid content. This includes physiological samples such as plasma, urine and CSF, as well as other types of samples such as protein hydrolysates and oxidised protein hydrolysates, which often contain high concentrations of salts.

Filtration through a 0.2 μm membrane prior to loading the sample onto the column is strongly recommended to prevent resin contamination.

Preparation of physiological fluids for amino acid analysis

The recommended procedure for the sample preparation of physiological fluid samples for amino acid analysis involves collecting the sample, removing proteins and filtering the sample. Plasma for example is prepared by collecting blood into a heparin coated tube and separating the plasma by centrifugation. Proteins are then precipitated using a chemical agent, typically 5-Sulphosalicylic acid. After spinning down the precipitate, the supernatant is filtered through a 0.2 μm membrane to remove any remaining particulate material prior to analysis.

Conclusion

Filtering samples prior to analysis on the Biochrom 30 Amino Acid Analyser can help to prolong the life of analytical columns. Available in a wide range of filtering media to suit all sample types, Whatman Mini-UniPrep Syringeless Filters provide a fast and easy way to remove particulates from samples being prepared for amino acid analysis.

If you would like to receive a free sample of Mini-UniPrep Filters, please contact support@biochrom.co.uk. For more information on the Mini-UniPrep Filter, please visit www.whatman.com

This last step is usually carried out using a syringe filter, which can often be time-consuming. An alternative is to use the Whatman® Mini-UniPrep™ Syringeless Filter. The supernatant (unfiltered sample) is transferred from the centrifuge tube into the Mini-UniPrep vial. By pressing the plunger through the sample placed into the chamber, the clean filtrate fills the reservoir from the bottom up. The Mini-UniPrep vial can then be placed directly into the Midas autosampler for injection into the Biochrom 30 Amino Acid Analyser.



The Mini-UniPrep Syringeless Filter on the left is shown with fluid in the chamber. On the right, the filter plunger is shown compressed with the sample ready for analysis.