A SUB-2µM PARTICLE PACKED COLUMN SUPERCRITICAL FLUID CHROMATOGRAPHY COUPLED TO MASS SPECTROMETRY FOR POLAR LIPID ANALYSIS

Michael D. Jones1,*, Gligorisa Isaac Mezgenj1, Giuseppe Azzarita1, Andrew Aubin2, John Shookor1, Cristina Leggo-Quigley2, and Norman Smith1

1Waters Corporation, Milford, MA, USA 01757; 2Pharmaceutical Science Division, School of Biomedical and Health Sciences, King’s College London

INTRODUCTION

The analysis of complex lipids is historically a challenging task and may require a variety of analytical techniques. Lipids are generally recognized as hydrophobic compounds, but the properties of complex lipids containing phosphorus, sulfur, and nitrogen functionalities can display a range of different behaviors in single chromatographic techniques for the separation of complex lipid mixtures due to the diversity of lipid classes. Recent advances in technology have made the utilization of supercritical fluid chromatography (SFC) as an alternative separation technique for lipid mixtures. Coupling SFC with mass spectrometry provides the researcher with a powerful analytical tool for characterization of complex lipid mixtures whilst acquiring highly specific and highly sensitive data that information can be translated into a biological profile.

RESULTS AND DISCUSSION

The columns explored resemble HILIC and standards and compare results obtained by UPLC/MS approaches. The columns explored resemble HILIC and standards and compare results obtained by UPLC/MS approaches. The key aspect to the MS optimization was determining an appropriate flow split that allowed for automated back pressure control.開發了SFC methodology for rapid screening of polar lipids in small samples that is ideal for the identification of critical components bound within a low analyte.

CONCLUSIONS

The scientific and technical breakthroughs presented in this work will provide a basis for future work including investigations of more complex lipid mixtures, with a combination of SFC/MS-MS strategy.

APPLICABILITY

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