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Removal of lipid interferences using zirconia-based Solid Phase Extraction (SPE) and QuEChERS sorbents

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Although lipids are essential to life processes, they pose an obstacle in both bioanalysis and food analysis. In addition to producing inaccurate detection limits and contaminating chromatographic systems, interfering lipids can ultimately lead to the shortened lifespan of columns and instruments. Traditional solid phase extraction (SPE) cleanup techniques often provide insufficient lipid matrix removal. Therefore, the use of zirconia-based sorbents has been developed for selective lipid removal, and consequently, better analyte determination. In addition to hydrophobic interactions, zirconia-based sorbents utilize Lewis acid/base interactions to selectively retain undesirable lipid interferences. In SPE and/or dispersive SPE (QuEChERS) formats, these zirconia sorbents may be combined with traditional phases like C18 to further improve inference removal. Compared to traditional cleanup sorbents, these innovative sorbents have been shown to remove more lipid matrix interferences, including di-, tri-, monoglycerides and phospholipids. A comparison of zirconia-based sorbents to traditional cleanup sorbents for lipid removal from various food and biological matrices will be demonstrated. Background removal, analyte recovery, and reproducibility of the different cleanup techniques will be compared in this presentation.

Biography

Jennifer E Claus has graduated from Lycoming College in 2001 with a Bachelor of Science in Chemistry and Biology. She has spent six years working at Merck & Co. in Rahway, NJ as a Medicinal Chemist. While at Merck, she attended Rutgers University and completed her Master of Science in Chemistry. She has been with MilliporeSigma for the past nine years, initially working as a Chiral Applications Chemist for the first four years of her MilliporeSigma career. She has been in her current marketing position as a Product Manager for Sample Preparation, for the past four years.

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