

Modern Toolkits for the Characterization of Biomolecules by LC and LC-MS

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The analysis of biomolecules is often a challenge due to their size, polarity, charge, or structural variety. We give you a brief insight into the latest generation of columns, workflows and methods for the characterization of proteins and oligonucleotides. A new titanium infused biocompatible hardware and frits minimizes unwanted secondary interactions, problematic carryover, and recovery issues between injection to detection. 4 Different particle platforms were especially designed to maximize chromatographic performance and efficiency. 9 Unique surface chemistries allow you to adjust the selectivity of the column according to your separation goal.

These toolkits will help to optimize your different bioanalytical workflows. An innovative pore controlled technology for silica particles improves size exclusion chromatography for a robust and reproducible aggregate and fragment analysis of mAbs and an increased column lifetime. The use of monosized non-porous polymeric particle grafted with linear polycarboxylate chains envelop and separate proteins from acidic and basic variants for a reliable charge variant analysis. A sterically hindered C18 ligand or a positively charged surface improves peak shape for basic analytes especially under MS suitable conditions for a better peptide mapping and quantification. With the optimal pore size distribution on a widepore Core-Shell particle, a better resolution of large biologics, including monoclonal antibodies and subunits can be achieved. A unique polar HILIC selectivity with an increased polar retention provides higher order separations of released and labeled glycans. And a robust organo-silica crafted Core-Shell particle allows efficient analysis of oligonucleotides under ion pairing conditions with reduced sample loss and adsorption.

This review about new trends in biochromatography will help you to update your existing workflows with latest column technologies and will give you useful tips and best practices as a start off point for new method developments.

Biography

Dr. Guido Rimmel obtained a diploma in organic chemistry in 1995 at the Julius Maximilian University of Würzburg, Germany and received a PhD in 2000 at the Institute of Organic Chemistry II and Advanced Materials at the University of Ulm, Germany. After four years of research work in the areas of sensor technology and micro reaction technology he joined Phenomenex LTD Germany in 2004 as technical sales consultant. Since more than 18 years he is providing application development, method optimization, and troubleshooting support to Phenomenex customers. With over 25 years of experience in the field of chromatography he is regularly conducting seminars on HPLC-, GC-, and SPE method development, preparative and chiral chromatography and troubleshooting. Beside the participation at conferences and trade shows he organizes and conducts the Phenomenex advanced training courses in Aschaffenburg as well as on customer sides.