Automated MAb Workflow: from Harvest Cell Culture to Intact Mass Analysis of Variants
Shanhua Lin,1 Gurmil Gendeh,1 Zhigui Hao,2 Andreas Huemmer,3 Srinivasa Rao,1 Yury Agroskin,1 and Chris Pohl1
1Thermo Fisher Scientific, Sunnyvale, CA, USA; 2Thermo Fisher Scientific, San Jose, CA, USA

Overview
Purpose: Deconvolution of aberrant molecular identity (MAb) analysis (MAbPac SEC-10R Monolithic Capillary Column) and SEC is an efficient way to obtain structural information of MAb variants.

Methods: Automated analysis is achieved with the Thermo Scientific Dionex UltiMate 3000 Dual Gradient Reversed-Phase Liquid Chromatography (LC) system equipped with a UV/VIS detector, a column oven, and an autosampler capable of dual-gradient injection and fraction collection. The LC system was coupled to a Thermo Scientific TSQ Vantage Mass Spectrometer equipped with an Analytical Flow Cell, BEHR, 1 µL Volume, and Q Exactive for tandem MS analysis.

Results: The workflow includes: (a) processing of Affinity Purified samples; (b) Collection of fractions; (c) Characterization of variants; and (d) Analysis of variants. The data are used to identify and quantify variants in the MAb samples.

Discussion: The MAbPac SEC-10R Monolithic Capillary Column is an efficient tool for the characterization of MAb variants. The LC system is capable of collecting fractions at a rate of 0.2 mL/min, which allows for efficient sample analysis and collection. The data analysis is performed using Thermo Scientific Dionex Chromeleon Chromatography Data System software. The intact mass detection provides accurate molecular mass determination.

Conclusion: The MAbPac SEC-10R Monolithic Capillary Column is an efficient tool for the characterization of MAb variants. The LC system is capable of collecting fractions at a rate of 0.2 mL/min, which allows for efficient sample analysis and collection. The data analysis is performed using Thermo Scientific Dionex Chromeleon Chromatography Data System software. The intact mass detection provides accurate molecular mass determination.