Protein Separations

Many of today's leading pharmaceutical drugs are protein based with monoclonal antibodies, biosimilars, and antibody drug conjugates leading an extensive list of internationally approved drug entities. Consequently, comprehensive LC and LC-MS protein characterization methods are necessary to help ensure the efficacy and safety of these biotherapeutics. These methods frequently involve the use of orthogonal separation techniques that include size exclusion, ion exchange, hydrophobic interaction, as well as hydrophilic interaction chromatography. HPLC methods are well recognized for their ability to resolve compounds of similar composition. However, the synergistic use of LC columns containing sub-2-µm particles on instruments designed to maintain enhanced component resolution have resulted in the ability to generate higher quality and more detailed information.

ACQUITY UPLC SEC SYSTEM SOLUTION

The performance capabilities of our ACQUITY UPLC Technology surpasses those of traditional LC separations, proving itself a major asset in increasing the productivity of laboratories around the world. The latest addition to the application-driven, UPLC portfolio is the ACQUITY UPLC SEC System Solution, enabled by our unique ethylene-bridged-hybrid (BEH), diol-coated, particle technology. That technology offers these benefits:

- The ability to determine aggregation levels in therapeutic monoclonal antibodies as much as 10× faster than traditional HPLC-based size-exclusion chromatography (SEC)

- A fully optimized column chemistry that significantly reduces the requirement for mobile phases of high-salt concentration

- Tested using BEH protein standards, ensuring unmatched batch-to-batch consistency and increased confidence in validated methods

- For 125Å, 200Å, and 450Å SEC columns, Waters Protein Standard Mixes provide additional validation (p/n: 186006519, 186006518, and 186006842, respectively)

UPLC Technology improves the quality of collected data while increasing sample throughput and productivity. If you manufacture biotherapeutics or biosimilars, you can now choose the most appropriate Protein BEH SEC Column (i.e., 125Å, 200Å, and 450Å pore size) to satisfy your application requirements.

Calibration Curves on ACQUITY UPLC Protein BEH SEC, 125Å, 200Å, and 450Å Columns
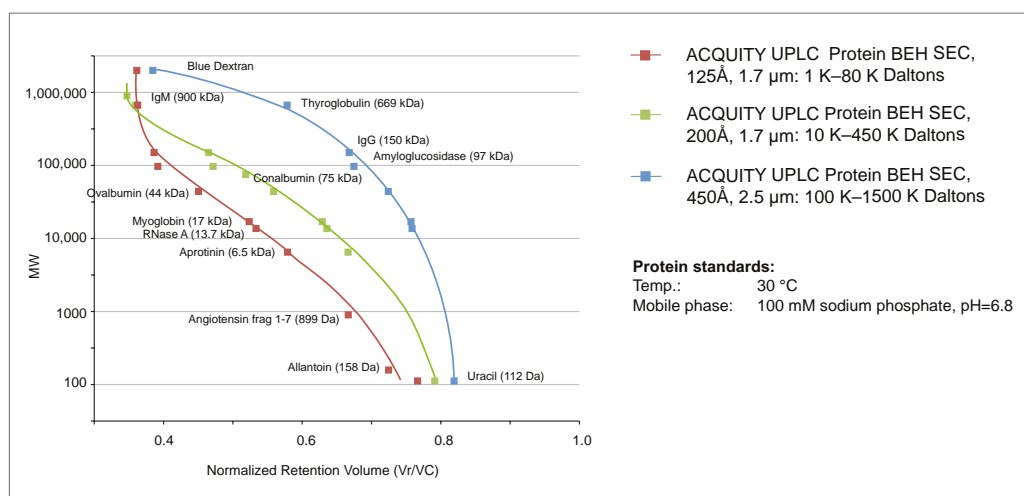
Size-exclusion chromatography (SEC) separates compounds according to, primarily, their relative size in solution. Calibration curves for UPLC-based SEC columns describe how various pore sizes perform with defined protein and peptides of known molecular weight.