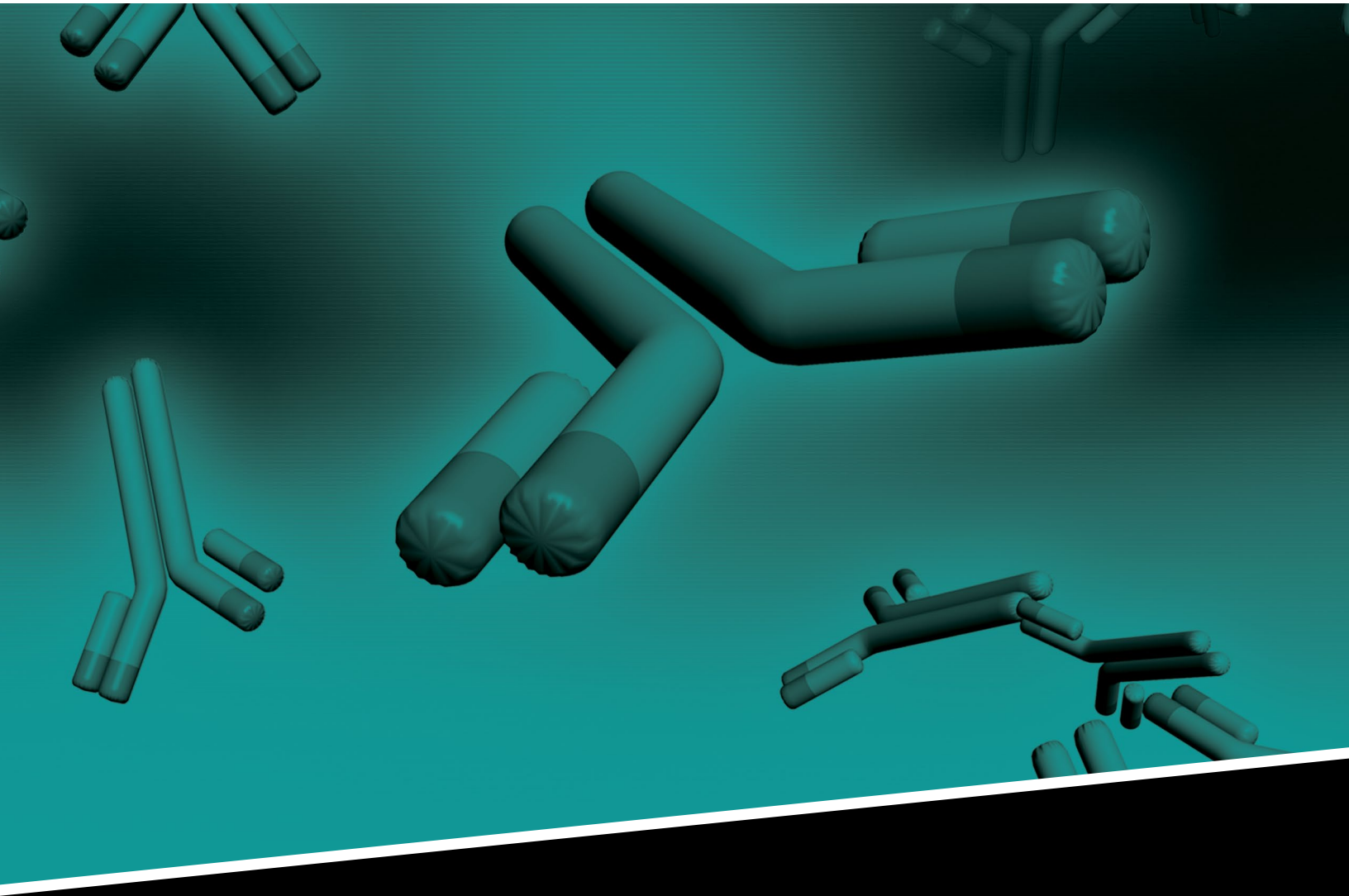
TOSOH

Solutions for Monoclonal Antibody Analysis and Characterization



TSKgel® U/HPLC Columns for Bioseparations

TOSOH BIOSCIENCE

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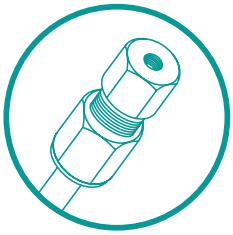
TOSOH

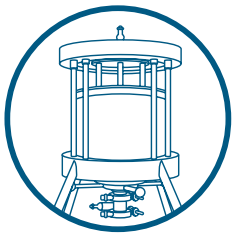
Solutions for Your Separation Tasks from Lab to Production

Tosoh Bioscience is a leading supplier of chromatographic columns, media and gel permeation chromatography (GPC) instruments with over 500 specialty products to meet your analysis and purification needs.



TSKgel® U/HPLC Columns

Extensively used in laboratories all over the world, our TSKgel columns are designed for researchers seeking the highest level of performance. Covering the total range of U/HPLC, these columns offer high resolution, excellent reproducibility, and long column life. Scaling up from analytical to preparative columns is made simple and easy.



TOYOPEARL® TSKgel & Ca^{++}Pure-HA® Resins

TOYOPEARL and TSKgel chromatography resins are specifically designed for the purification of biomolecules. Ca^{++}Pure-HA is a hydroxyapatite resin and has unique separation properties for biomolecules. These resins show excellent physical strength and ideal flow characteristics for industrial downstream processing.

EcoSEC® GPC Systems

The EcoSEC series of fully automated liquid chromatography systems for gel permeation chromatography is designed for robust polymer analysis. Both solutions, for ambient and for high temperature GPC, combine dual pump solvent systems, sophisticated heating and a highly efficient detection system to deliver the highest reproducibility.

This brochure will introduce you to TSKgel columns for monoclonal antiboday (mAb) analysis and characterization.

Solutions for Monoclonal Antibody Analysis and Characterization

TSKgel U/HPLC Columns for Bioseparations

Protein, monoclonal antibody (mAb) and antibody drug conjugate (ADC) biopharmaceuticals form a major part of the growing biologics drug market. During development and production of these products, it is essential to detect, characterize and quantify impurities as well as structural variants and modifications, and to monitor product stability. Figure 1 highlights several approaches to mAb and ADC characterization including size exclusion chromatography (SEC) for aggregate and fragment analysis, SEC/mass spectrometry (MS) for accurate mass determination, hydrophobic interaction chromatography (HIC) for ADC drug-to-antibody ratio (DAR) analysis, cation exchange (CEX) for charge variant analysis, and affinity chromatography (Protein A) for titer analysis.

Figure 1. LC and LC/MS protein analytical chemistry methods for testing biological products

Titer Analysis	**mAb titer determination (concentration) and screening**
Aggregate Analysis	**Screening for mAb aggregates**
Charge Variant Analysis	**Charge variant profiling/screening**
Drug-to-Antibody Ratio (DAR) Analysis	**ADC DAR analysis**
Intact mAb and Fragment Analysis	**Light chain (LC) and heavy chain (HC) analysis; Fab and Fc analysis; scFc and $F(ab')_2$ analysis**
Glycan Profiling	**Profiling of released glycans**
Accurate Mass Determination	**Mass spectrometry under native conditions**

Tosoh Bioscience offers innovative products that have been specifically engineered for these LC and LC/MS protein analytical chemistry methods for testing biological products. This specificity ensures high quality and consistent results.

Get Started

Additional resources are available for helping you implement TSKgel U/HPLC columns into your laboratory:

Web

Visit tosohbioscience.com for videos, product information and ordering.

Email

Our technical service staff is ready to answer questions: techservice.tbl@tosoh.com

In Person

A technical seminar can be arranged on-site or via the web. Request via seminars@tosoh.com