



PRESS RELEASE

LenS3 MALS Detector - A Revolutionary Approach to Light Scattering Technology

Characterization of macromolecules in a new light.

Tosoh Bioscience, a leading global supplier of liquid chromatography technology, launched the LenS3™ MALS Detector for GPC, HPLC and UHPLC, the most profound innovation in light scattering technology for decades. It is the most sensitive MALS detector for characterizing macromolecules like synthetic and natural polymers, proteins or antibodies. No matter whether it is the determination of mass, size and shape or the quantification of different species present in the sample.

The new detector integrates the best of both Multi-Angle and Low-Angle Light Scattering (MALS and LALS) concepts to create a new paradigm in light scattering detection. The proprietary flow cell design leads to a higher signal-to-noise ratio resulting in lower detection limits. The detector is capable of measuring molecular weight directly and detecting angular dependence of scattered light for molecules down to 2 nm in size (Radius of Gyration).

Over the past four decades, low angle and multi-angle light scattering (LALS and MALS) instruments have been commercially available, each with its own benefits and drawbacks, forcing scientists to choose one over the other. The new light scattering technology applied in LenS3 combines the benefits from each type of detector to address the shortcomings of these traditional measurements.

The new detector features a novel, elongated flow path geometry that maximizes scattered light collection, to increase the detector's response, while the non-refractive material of the chamber eliminates noise from stray light. The resulting high signal-to-noise makes this detector the most sensitive MALS detector on the market. The advanced optical design also provides exceptional signal-to-noise at the crucial extreme angles (10° and 170°) for molecular weight and size measurements. In addition, a new angular dissymmetry plot has introduced a simpler and more direct approach to size determination.

The resulting enhanced capabilities and unprecedented sensitivity of the new LenS3 MALS detector provide a direct and accurate measurement of molecular weight, even for oligomers and low dn/dc samples. Moreover, the angular dependence can be reliably detected to a considerably lower level, thus extending the range of radius of gyration (R_g) determination by light scattering down to a few nanometers for the very first time. The LenS3 MALS detector can interface with GPC, HPLC and UHPLC systems.