ARGEN™

Smart and Rapid Therapeutic Biopolymer Development

ARGEN™

Smart and Rapid Therapeutic Biopolymer Development

ARGEN™ at-a-glance

ARGEN™ is a high throughput tool for the rapid assessment of the stability and viability of therapeutic proteins, peptides, and biopolymers. The instrument uses a multi-stressor testing platform powered by static light scattering detection and intuitive data processing. These features enable teams to develop biologic formulations up to 16 times faster.

Key Benefits

Smarter and faster product development	Early detection of aggregation or degradation for rapid decision-making
Rank the stability and viability of all classes of biopolymers (proteins, peptides, RNA, DNA, sugars)	Continuous and flexible operation for temporal stability studies and establishing shelf-life
Matrix DOE capability for modeling and rapid screening of thermal, chemical, and mechanical stress impacts	16-fold reduction in time and resources required to identify optimal target formulations

How ARGEN™ Works

ARGEN™ utilizes fixed angle (90°), SMSLS (simultaneous multiple sample light scattering) technology which provides rapid, real-time, continuous data collection for characterizing qualitative and quantitative properties of target molecules. The device is equipped with 16 independently controlled sample cells, permitting the user to model thermal (from 18^0C-100^0C) and mechanical (stirring) stress on each sample concurrently. This allows for a highly flexible approach to experimental design.

Key Outputs for Qualitative and Quantitative Analysis

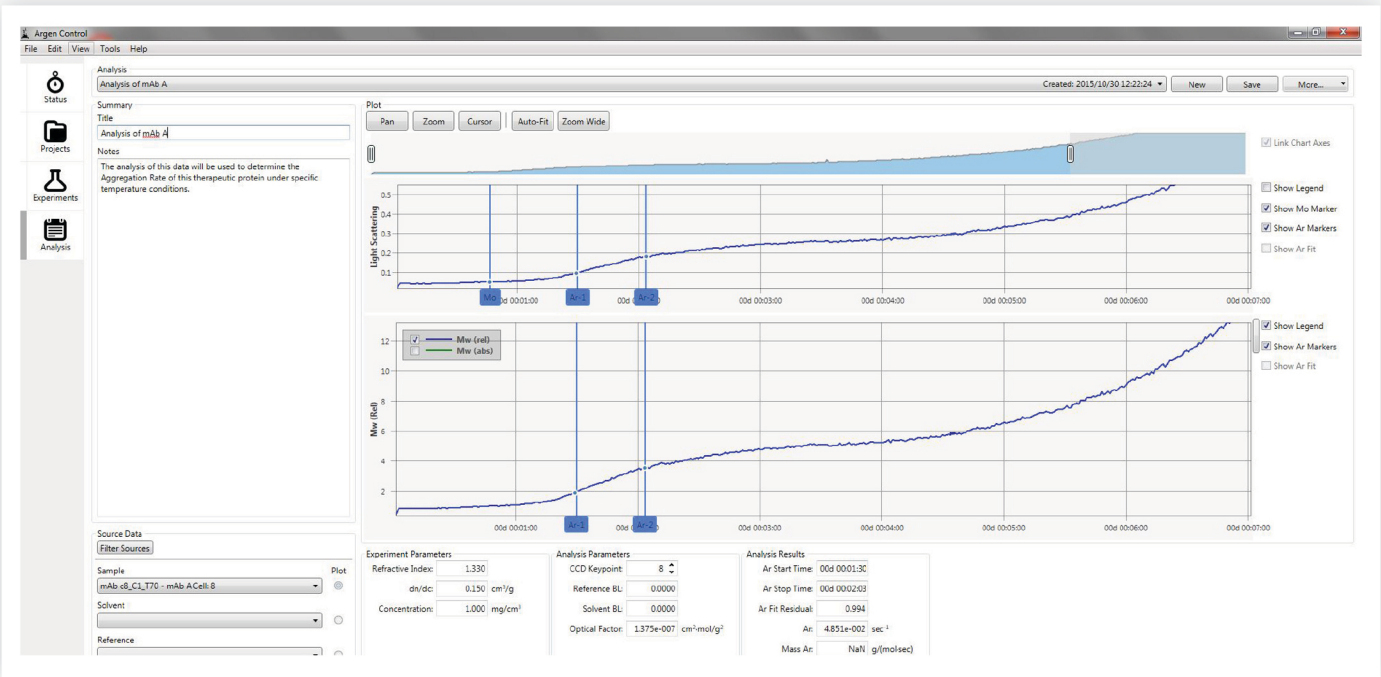
- $(M_w/M_0)/t)$): Normalized molecular weight with respect to native molecular weight
- M_w(abs): Absolute molecular weight
- AR: Aggregation Rate

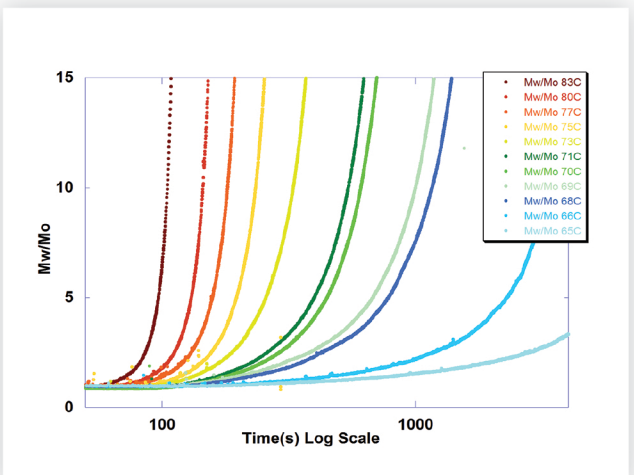
Intuitive Control Software

ARGEN's control software features an intuitive interface for all aspects of experimental design and independent control of each cell for parallel parameter adjustment and real-time data processing.

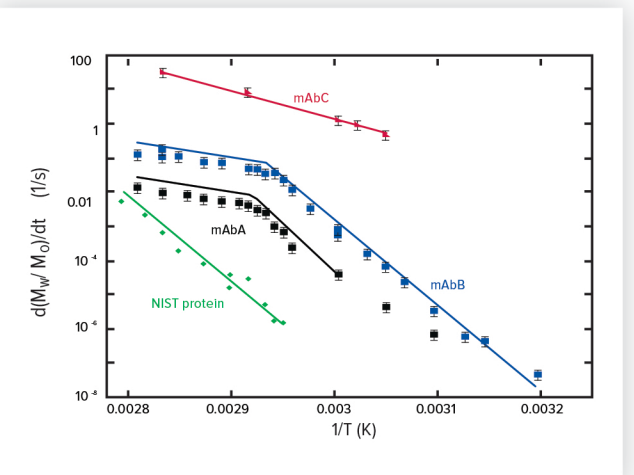
ARGEN™ Data Analysis

The ARGEN™ control and analysis software allows for easy navigation and real-time data analysis to quickly determine experiment quality as well as target biopolymer stability characteristics. Integrated data evaluation features permit the user to assess aggregation rates (expressed as $(M_w/M_0)/t$)) and determine oligomeric state transitions intra- or post testing. The aggregation rate (AR) evaluation package enables the user to select the desired range for precise and accurate characterization of transition states. In addition, the user may select premeasured solvent and reference calibration standards to monitor variations in weight average molecular weight (Mass AR) for the duration of the experiment. Post analysis reports can be generated in portable document format (.pdf) and raw data and analysis results can be exported in comma-separated values format (.csv) for further analysis and publication.





Temp. Dependent Aggregation of Monoclonal Antibodies



Arrhenius Plot Showing AR VS 1/T

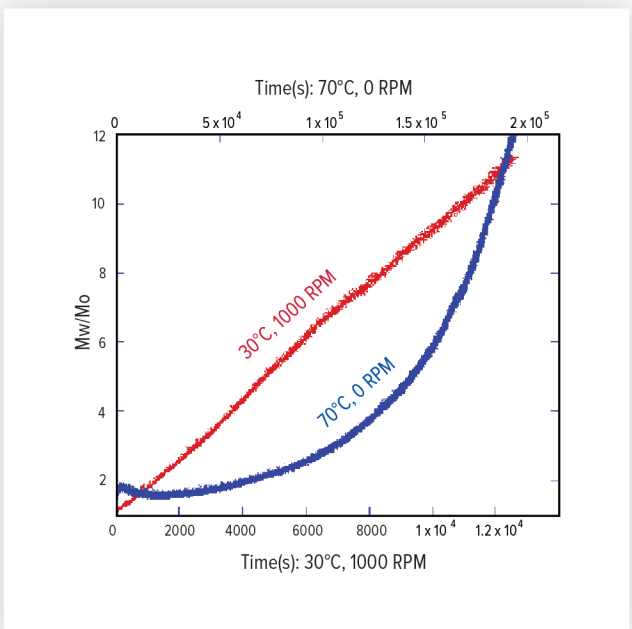
ARGEN™ Applications

Stress Case Studies

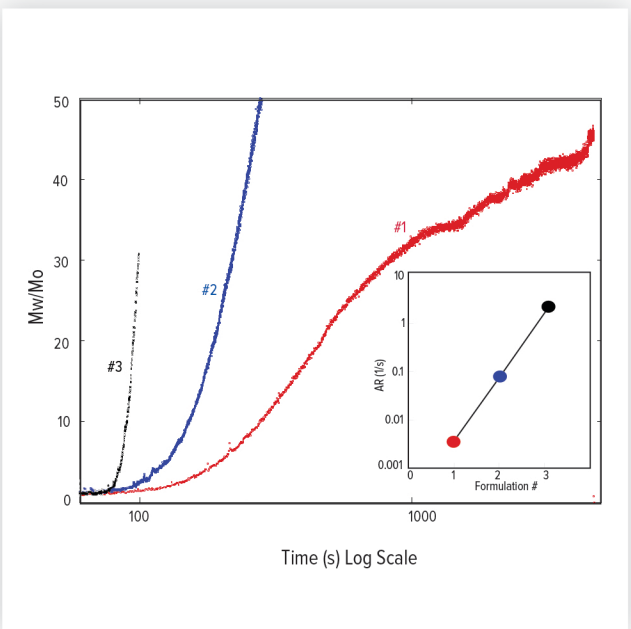
Are you trying to predict the future?
Select candidates that are most likely to remain viable during storage and post downstream processing by modeling mechanical and thermal stress conditions.

Rapid Formulation Development

Formulate with matrix DOE strategy using our sensitive and rapid screening tool to discover winning formulations faster.



Aggregation Rate Dependence on Stirring VS Temperature



Aggregation Rate Dependence on Formulation Makeup

Rapid Fail Analysis

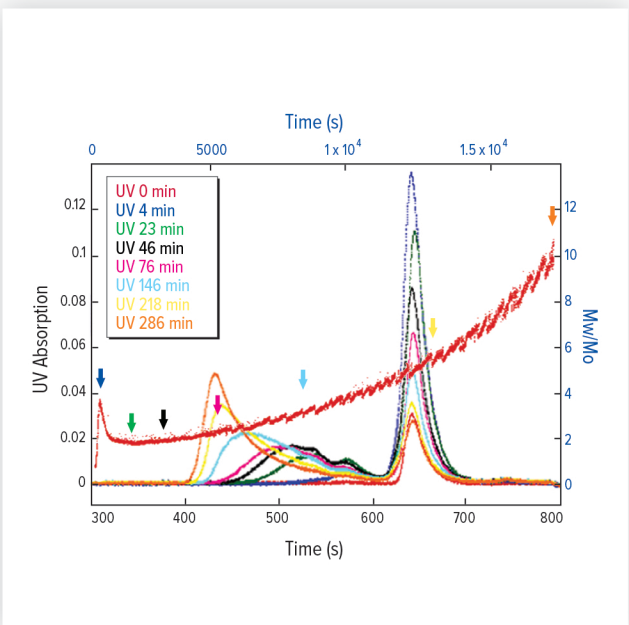
Fail early, fail cheaply!
Discover unstable product candidates early with monomer to dimer transition detection.

Rapid Solubility Analysis

Does your product need to be reconstituted?
Determine ideal solubility conditions rapidly with matrix DOE strategy and evaluate several solvent or buffer conditions simultaneously.

SEC/GPC Scheduling

Don't wait to make decisions.
Many laboratories wait to schedule SEC/GPC experiments. With in-situ, real-time aggregation data – remove an aliquot and perform SEC/GPC experiments immediately!
Get results and move forward.



SEC/GPC Scheduling

ARGEN™
At-AGlance FAQs

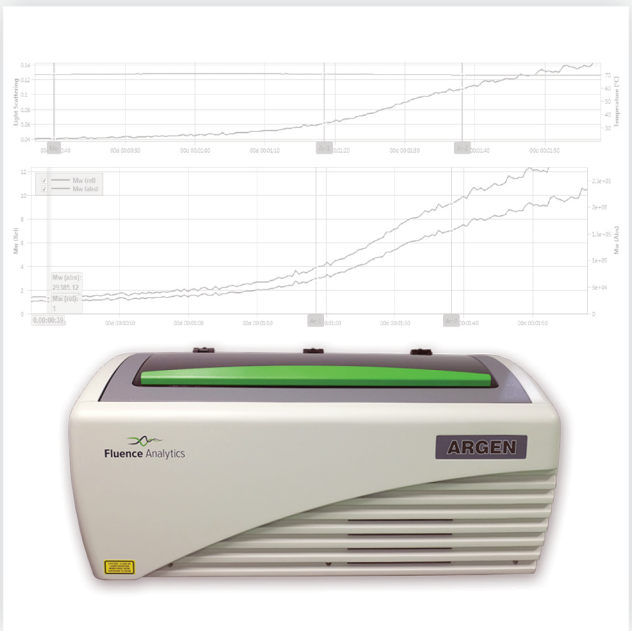
Technology	90° single angle static light scattering
Laser Wavelength	660 nm
Laser Power	30mW, 9.6mW, 3.0mW, 0.9mW, 0.3mW, 0.09mW, 0.03mW
Temperature Control Range	Ambient - 100°C
Stirring Control Range	0 - 2,000 RPM
Power Requirements	120VAC, 60Hz, 1600W
Physical Dimensions	31.5” W x 21” D x 14” H (29” H with lid open)
Weight	90 lbs, 40.8 kgs

Outputs are Normalized Mw and Aggregation Rate - Continuous and Real Time

M_w (kDa)	1.0 kDa	10 kDa	100 kDa	1000 kDa
C_{min} (mg/mL)	3.0 mg/mL	0.3 mg/mL	0.03 mg/mL	0.003 mg/mL

Toluene Samples: Selected values of C_{min} for specific M_w.
A typical biopolymer of 1 kDa requires a minimum concentration of 3 mg/ml.

Cuvette Type	Minimum Sample Volume	Maximum Sample Volume	Requires Adapter	Stirring Capability
Glass 10 mm	0.7 mL	4.0 mL	No	Yes
Disposable PMMA 10 mm	0.7 mL	4.0 mL	No	No
Glass 4 mm	0.08 mL	0.5 mL	Yes	No



ARGEN™
Aggregation Rate Generator

The expert team at Fluence Analytics is ready to evaluate your application.

Contact us today!

Call us:
+1 281 801 4191

Send us an e-mail:
info@fluenceanalytics.com

Visit our website:
www.fluenceanalytics.com

YOKOGAWA
Yokogawa Fluence Analytics
12875 Capricorn Street
Stafford, TX 77477 USA