

Novel Technologies for the Characterisation of Protein Viscosity, Aggregation and Stability

PRESENTATION OF WHAT'S NEW & NOVEL

Understanding the stability of a bioformulation, particularly one used as a therapeutic at high concentration, is paramount to mediating immunogenic risk in a patient. One of the most challenging aspects of developing a commercially viable bioformulation is understanding the relationship between the bulk properties of a sample such as viscosity, stability and aggregation state, relative to the protein concentration.

This presentation will describe how novel technologies from Malvern instruments including the **Viscosizer TD** and **Zetasizer Helix** systems assist to meet these challenges. Using very small sample volumes, users are provided with unique information on the chemical and physical stability of a sample. Even in the presence of excipients and surfactants, the main source of measurement interference in other techniques, biomolecules can be characterised label-free without dilution or filtration.



Viscosizer TD will be available for free trial post seminar. For details contact us.

SEE CLEARLY INTO COMPLEX SOLUTIONS USING TAYLOR DISPERSION ANALYSIS

MELBOURNE	SYDNEY	BRISBANE
Thur 11 FEB	Tue 16 FEB	Wed 17 FEB

SESSIONS

9am-10am and repeated **2pm-3pm each day**. Following each presentation our guest speaker will be available for questions. Refreshments will be served.

REGISTRATION

Please register using the online form

www.atascientific.com.au/eventsandtraining/registration-page/

RSVP: 11 February 2016

For further information, call **02 9541 3500** or email enquiries@atascientific.com.au

GUEST SPEAKER

Matthew McGann has 12 years experience with analytical instrumentation. Currently Matthew is responsible for the Innovation Products within the Americas for Malvern Instruments.

The Innovation Products are a category of new, emerging and complementary technologies specifically targeted at the Life Science market. Matthew's team is focused in identifying new applications for these unique technologies.



Turn over for more details on the technologies we support

Accelerate biotherapeutic development

Rapidly identifying stable biotherapeutic formulations is critical to reducing development costs and determining a biotherapeutic's future success. Malvern Instruments' family of innovative Bioscience Solutions will accelerate the pace and productivity of your biotherapeutic development.

FORMULATION STABILITY



- Taylor Dispersion Analysis
- Particle size range ($R_h = 0.2-50\text{nm}$)
- Relative viscosity (1–50cP)
- Analysis without dilution or filtration ($<7\mu\text{L}$).

Viscosizer TD



- Differential Scanning (DSC) and Isothermal Titration Calorimetry (ITC)
- Molecular interactions, conformational changes and protein unfolding
- Requires minimal assay development and NO labelling.

MicroCal ITC/DSC



- Dynamic (DLS)/ Static (SLS) light scattering for particle size, charge, mobility, zeta potential, k_D , B_{22}
- Raman spectroscopy for insight into unfolding processes and aggregation. Correlates colloidal and conformation stability.

Zetasizer Helix



- Multi-Angle Light Scattering (MALS)
- Absolute Molecular Weight and radius of gyration (Rg)
- Twenty analysis angles improves performance
- Interface directly to your existing SEC/GPC system.

Viscotek SEC-MALS 20

PARTICLE CHARACTERISATION



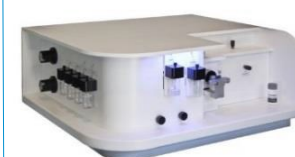
- Automated particle shape and size (1 – 1000 μm)
- Combines automated particle imaging with Raman spectroscopy.

Morphologi G3 / G3-ID



- Nanoparticle Tracking Analysis
- Real-time, automated analysis of size, distribution, and concentration of nanoparticles (30nm – 2 μm)
- Fluorescence mode and optional lasers extend particle speciation capabilities.

NanoSight NS300



- Resonant Mass Measurement (RMM)
- Detect and count particles in size range 50nm – 5 μm
- Measure buoyant mass, dry mass and size. Distinguish between protein material and silicone oil.

Archimedes



- World's most popular particle sizing instrument using Laser Diffraction
- Delivers rapid, accurate particle size distribution for both wet and dry dispersions (10nm – 3.5mm)
- Intuitive software with built-in expertise to ease your workload
- Visualise dispersion quality using $<10\text{mL}$ sample volume.

Mastersizer 3000