

# TA Instruments - a division of Waters Corporation



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# Instruments for Physical Properties Characterisation of Materials

- **Thermal Analysis**

- DSC – Thermal stability of formulations (solid and liquid)
- Modulated DSC – freeze drying optimisation
- DVS – effect of moisture on formulations
- DMA – optimisation of packaging materials

- **Rheology**

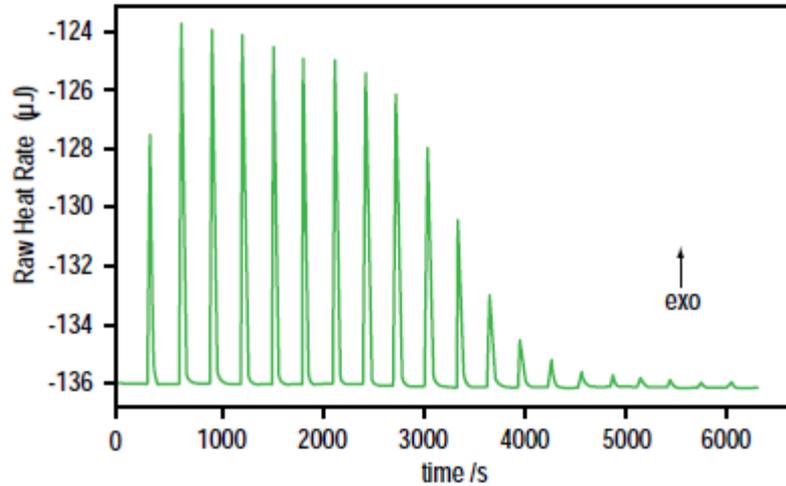
- Optimum viscosity for efficient delivery
- Optimising formulations

- **Microcalorimetry**

- DSC – stability of biomolecules
- ITC – characterising biomolecule interactions
- TAM – characterisation of stability, compatibility, microorganism growth, high-throughput screening

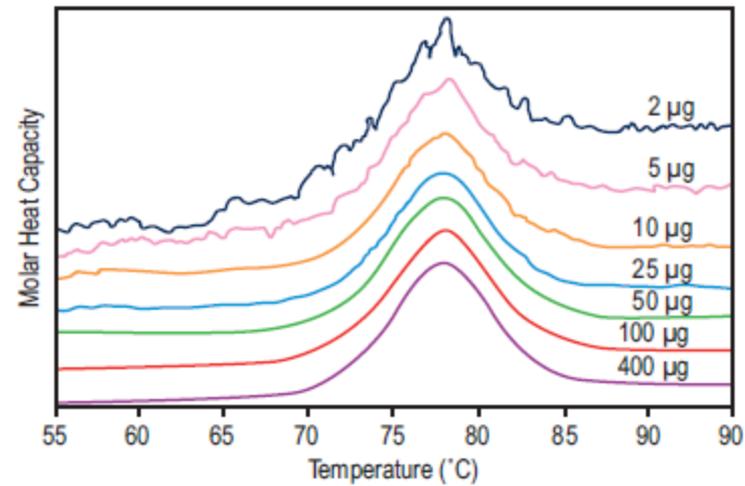
# Key tools for Biopolymer characterisation

## ITC (Isothermal Titration Calorimetry)



- Binding affinities typically  $10^3$ - $10^9$ M<sup>-1</sup>
- Stoichiometry
- Thermodynamics
- Label free samples
- Available in 1ml and 190µl cells

## DSC (Differential Scanning Calorimetry)



- Thermal Stability
- Heat capacity
- Pressure Perturbation capability as standard
- 0.30ml capillary cells
- Auto sampler with 96 well plate format