

AppliedPhotophysics

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Spectroscopy Article

"Structure and Thermodynamics of a Monoclonal Antibody Biotherapeutic in Different Formulations"



Applications Overview



The products from Applied Photophysics are designed to study a wide range of molecules and are widely used in research and pharmaceutical applications. The product portfolio includes three main technology platforms:

Circular Dichroism (CD) spectroscopy that is used primarily for looking at protein secondary & tertiary structure, protein folding and the stability of proteins in different environments; this has been widely adopted in many applications in the fields of biophysical and biochemistry research. Circular dichroism is also widely used in the Pharmaceutical industry particularly in biotherapeutic drug development to optimize formulations and understand protein structure and stability. Additionally the technique has also been used in pharmacokinetics to study in-vitro the potential interactions of small molecule drugs.

Stopped flow technology is extensively used to study biomolecular interactions, kinetics and fast reaction mechanisms typical of many reactions in chemical and biological systems. This technology has been widely adopted and is a powerful tool for analysis of mechanisms of a great variety of chemical and biochemical phenomena.

Laser flash technology is used to measure extremely fast reaction mechanisms, typically of transient species such as radicals, excited states or ions. This highly specialised technique allows probing of some of the fastest chemical processes, and consequently has been used extensively to research these phenomena.

Pharmaceutical applications include:

Automated Circular Dichroism

Protein pharmaceutical stability, formulation and quality control

Pharmacokinetics of small drug molecules

Research applications include:

Protein folding

Structure and conformational studies

Biomolecular reactions and kinetics

Chemical reaction mechanisms

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