

Characterization of Monoclonal Antibodies Using X-ray and Neutron Scattering

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Monoclonal antibodies (mAbs) have become important molecules used to treat a wide variety of medical conditions worldwide. In many cases, the development of viable mAb candidates can be challenging due to the physical chemical properties emerge in high concentration formulations. We have used a variety of X-ray and neutrons scattering techniques to study mAbs at various concentrations and phases. Our analysis procedures include the development and use of atomistic models to help interpret scattering data. Results will be presented on our characterization efforts of a few mAb candidates using small-angle scattering with and without in-line chromatography, neutron reflectometry and other biophysical techniques. Scattering and modeling can provide insightful information about solution structure and interactions that can enable a more complete understanding of the physical behavior therapeutic molecules in industrial relevant sample conditions.