Biophysical Characterization

Human Health Therapeutics

Guiding biologics discovery and development

Our team draws on its comprehensive experience in protein characterization and purification to actively guide biologics discovery and development. Our advanced methods enable the testing of binding affinity, stability, aggregation, and post-translational modifications that affect biological activity, all of which are important criteria in selecting and designing a candidate with the desired clinical properties. Assays and methodologies to characterize biologics early in development serve as quality control tests to monitor production of biologics at pilot and commercial scale.

Evaluating complex protein structures

Biologics are large molecules derived from living cells; they often undergo post-translational modifications and have complex secondary, tertiary and sometimes quaternary structures. Early-stage development of biologics entails developing methods of screening and evaluating the biophysical properties and biological activity of candidate molecules. Building on over 10 years’ experience, we offer key biophysical characterization capabilities to our clients.

Our expertise

• Iterative evaluation of structure-function relationships in antibody libraries to validate molecular modeling approaches;
• Measurement of molecular interaction kinetics;
• Monitoring and characterization of structure, determination of molecular weight, charge heterogeneity, post-translational modifications, purity, stability, solubility and aggregate formation to meet regulatory requirements; and
• Advanced Analytical Platform to facilitate selection of therapeutic or diagnostic candidates for development.

Helping SMEs characterize their products

NRC-HHT is successfully partnering with innovative Canadian company Zymeworks to validate their in silico algorithms for designing bi-specific antibodies capable of binding two different therapeutic targets. NRC’s biophysical characterization expertise was crucial in helping Zymeworks secure strategic partnerships with two multinational pharmaceutical companies.

Contact

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Interested?

Attuned to the needs and challenges that industry faces in bringing biologics and vaccines to market, our team has the proven ability to partner successfully with companies to develop new products that improve human health. Contact us today to discover how we can help you!