

Services Overview

Protein Production

- Construct design and production
- Expression in *E. coli*, baculovirus, and mammalian systems
- Customized tags, refolding techniques, or post-translational modifications
- Recombinant protein purification method development
- Extensive protein characterization
- Products on 1 mg to 500 mg scale
- Generation of higher-order complexes

Biophysical Ligand Binding Assays

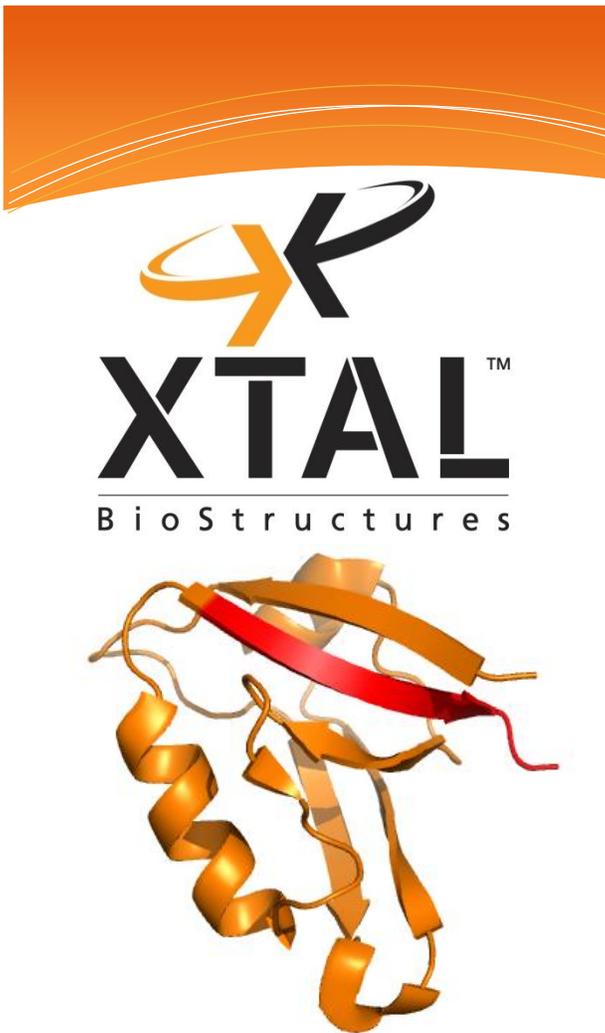
- Thermal Stability Analysis (TSA)
- Isothermal Titration Calorimetry (ITC)
- Surface Plasmon Resonance (SPR)

Custom Assays

- Fragment-based screening
- Kinetic assays
- Cell-based assays

X-ray Crystallography

- Crystallization screening
- Crystal growth optimization
- X-ray data collection
- Structure determination and interpretation
- Structure guided design
- Publication/deposit



Closer to the Science!

Xtal BioStructures was founded in 2005 with the mission of providing our clients with high quality research and reagents.

To enable proof-of-concept experiments and drug discovery programs, we produce high-purity biochemical products, provide a pipeline of affinity-based biophysical measurements, and generate high-resolution X-ray crystal structures

Utilizing the expertise and experience of our program teams, we offer scientific consulting and project design advice, along with the ability to rapidly execute on approved project plans.

At Xtal BioStructures, we also believe that open communication is a critical factor to help you achieve the best possible outcome.

XTAL BioStructures, Inc.

12 Michigan Drive

Natick, MA 01760

www.xtalbiostructures.com

Email: info@xtalbiostructures.com

Phone: (508)318-4674

High Quality Protein Production

XTAL has the capability and experience to provide high quality proteins for use in pilot studies, assay development, high-throughput screening, and X-ray crystallography. We offer construct design and synthesis with codon optimization using bacterial, baculovirus, and mammalian expression systems to produce well characterized proteins with high purity. Each protein will be characterized by SDS-PAGE, Western blot, mass spectrometry, size-exclusion chromatography and a thermal stability profile. We also will undertake the development of challenging proteins, such as the co-expression or assembly of higher order complexes.

Biophysical and Custom Assays

XTAL provides biophysical characterization for the measurement of ligand-protein interactions using thermal stability, surface plasmon resonance, and isothermal titration calorimetry. Applications include confirmation of ligand binding, fragment-based or compound library screening, determination of binding kinetics and thermodynamics (stoichiometry, enthalpy, and binding constants). We may also identify optimal storage conditions and pre-formulation studies for biotherapeutics. Customized assay development services may involve affinity-based, cell-based or enzymatic assays.

X-ray Crystallography

XTAL provides X-ray crystallography for use in structure-guided drug discovery. Our X-ray crystallography services include crystal screening, crystal growth optimization, synchrotron X-ray data collection, structure determination and interpretation, publication/deposit, structure-guided design, and fragment-based screening. The structure of the ligand-target complex will identify the molecular interactions governing the binding site of the ligand. The conformation observed for the bound molecule and the protein provides a wealth of understanding. We also offer antibody-antigen structures, and small-molecule crystallography to provide additional information to generate therapeutics that better interact with the target.

Affinity-Based Drug Discovery

At XTAL, we are able to provide services and consultation from target to qualified lead molecule. Our affinity-based and structure-guided drug discovery platform will provide the insights to guide medicinal chemistry to identify and improve quality lead compounds. Our highly specialized scientists have years of experience and expertise to apply to your project at every step of the process.



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