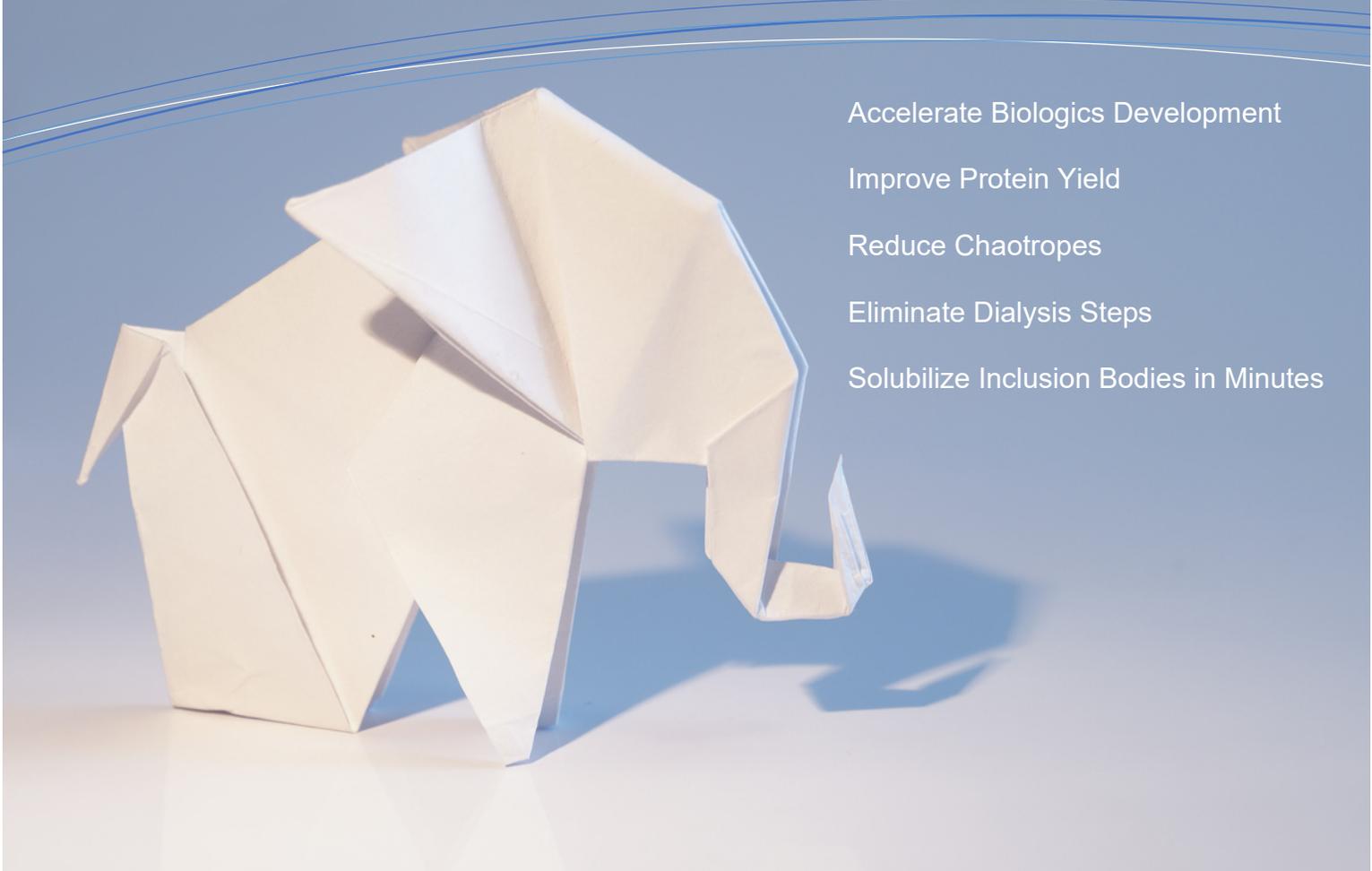


BaroFold Technology Platform

High Pressure Disaggregation and Controlled Refolding of Proteins



Accelerate Biologics Development

Improve Protein Yield

Reduce Chaotropes

Eliminate Dialysis Steps

Solubilize Inclusion Bodies in Minutes

Proteins overexpressed in bacterial systems tend to be misfolded and aggregated in a manner that forms larger cavities, compared to native protein structures. High hydrostatic pressure has shown promise as a means of disaggregating and solubilizing protein aggregates using relatively mild buffer conditions. By disaggregating inclusion bodies without the high levels of denaturants required under conventional conditions, subsequent protein refolding to their native structures can often be improved.

Pressure's effects on protein conformation are explained by hydration of solvent-excluded cavities that are eliminated upon unfolding. Pressurization typically leads to preferential solubilization of protein from inclusion bodies, aiding in simplified protein purification. Pressure unfolding usually preserves certain stable secondary structure features (such as alpha-helical motifs) that may already exist in recombinant protein trapped in inclusion bodies, thus potentially simplifying the subsequent refolding steps.

The BaroFold Technology Platform from PBI employs high pressure for disaggregation and controlled refolding of proteins to their native structures at yields and efficiencies not achievable with existing technologies in most cases without chaotropes. Helping to streamline development and production of biotherapeutics, cut cost and save the environment!

Does Pressure Matter?



The Barocycler 2320EXT is a powerful, multi-faceted tool designed for analytical development, discovery, and protein characterization laboratories. Applications range from discovery to production.

This benchtop high pressure system can screen up to 16 samples and chemistry compositions at a time to determine if pressure can be used to refold a protein to its native conformation, allowing for rapid and streamlined identification of the best formulation prior to scale up.

The Barocycler 2320EXT is available for purchase with a non-commercial license. Purchase includes access to Pressure BioSciences' experts in high pressure protein refolding for application support.

BioPharma Services

Pressure BioSciences' in house experts in high pressure protein refolding accept samples on a contract basis.

- Stage 1: Technical Feasibility
Solubilization of inclusion bodies and determination of appropriate protein unfolding and disaggregation conditions
- Stage 2: Refolding Optimization Studies
Optimization of refolding conditions to maximize yield of refolded protein
- Stage 3: Pilot Refolding Run
Produce milligrams of refolded protein for testing of conformation, biological activity and stability at PBI and/or at the customer site

Scale Up Solutions

Upon successful optimization, PBI will help in cGMP scale-up process by working with our high pressure vendor partners.

- Develop scale-up strategy
- Provide customer with screening and optimization tools
- Prepare 4-20 grams of protein in GMP facilities for testing
- 10L cGMP-Reactor Production of material for toxicological and clinical studies
- Procure, install and validate large scale reactor sized to meet your business needs



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