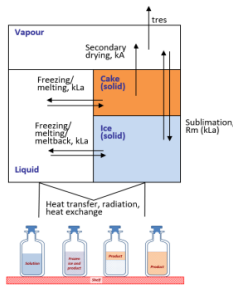


Accelerate Bioprocess Development Using Digital Twins for Biologics



Robust at Any Scale

Leverage models to understand the impact of critical process parameters on key quality attributes at multiple scales. For example, ensure equivalent mixing performance between shake flasks, wave bags and ambr™ 15 reactors and production bioreactors.



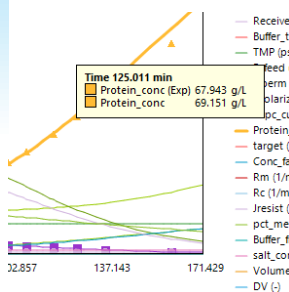
Ready-to-Use Model Library

DynoChem Biologics Resources provides a full library of models for common upstream and downstream operations. The easy-to-use interface coupled with training from modeling experts enables roll-out to a wide user-base.



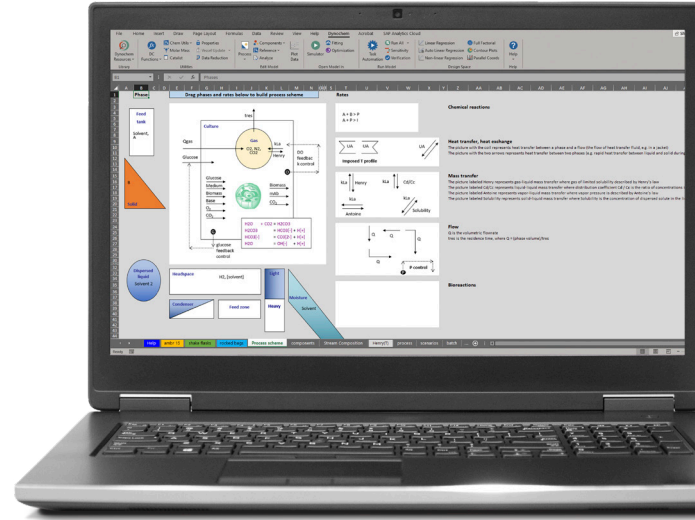
Leverage PAT Data

Data from Process Analytical Technology (PAT) enables detailed models, making it possible to design and analyze fewer high-quality experiments to characterize and successfully scale your bioprocess system.



Lifecycle Digital Twins

Deploy models to predict performance, find optimal operating conditions, optimize yield and drive innovation. Reduce the number of experiments by running variations and testing new process equipment in-silico.



Dynochem Biologics

Dynochem Biologics facilitates improved scale-up of biochemical processes by using a comprehensive library of models. Mixing calculation tools help scale from common lab scale reactors to large scale biologics reactors. Bioreactor models support prediction of glucose and DO levels, pH and titer at each scale. Downstream models include disk-stack centrifuge, depth filtration, virus inactivation, TFF and diafiltration. Fill/finish tools predict lyophilization in vials, including prevention of meltback/collapse.

Accelerate Bioprocess Development Using Digital Twins for Biologics

- Easy-to-learn modelling tools covering Upstream and Downstream operations
- Developed to work with equipment and data used in Biologics development and production
- Step-by-step guidance, user training and expert project support
- Deployable on any PC or laptop running Windows 8 or higher

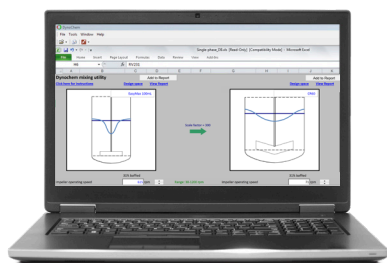
Dynochem Biologics template models include:

- Bioreactor Mixing Toolbox
- Fed-batch Fermentation
- Dissolution and Solution Preparation
- Buffer Preparation
- Enzyme-Catalyzed Reactions
- Monod and Michaelis-Menten Kinetics
- Tangential Flow Filtration
- Disk Stack Centrifuge
- Depth Filtration
- Virus Inactivation
- Lyophilization
- Drug Product Stability Toolbox
- Suzuki Coupling

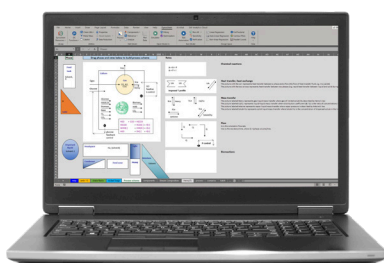
Scale-up Suite


Scale-up Suite is the world's leading drug substance process development and scale-up software for scientists and engineers working in the pharmaceutical industry.

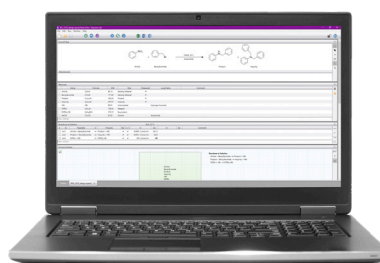
 **Dynochem**
Accelerating Chemical
Process Development



 **Dynochem Biologics**
Accelerating Bioprocess
Development



 **Reaction Lab**
Accelerating Reaction
Optimization



METTLER TOLEDO Group
Automated Reactors and In-Situ Analysis
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For more information

Subject to technical changes
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