



## Maximizing Performance of CHO cells Stabilizer Library for cost-efficient protein production

Are you a pharmaceutical company struggling with high production costs for biopharmaceuticals due to limitations of CHO cell lines? Unleash the full potential of your CHO protein production with acib's stabilizer technology to increase yields.

### BACKGROUND

Advances in medicine and biotechnology have enabled the production of biopharmaceuticals (e.g., antibodies, vaccines) and cell therapeutics (e.g., T cells, embryonic stem cells, iPSCs). However, the development and implementation of these advanced technologies often involve high costs due to the necessity of using mammalian cell lines, primarily CHO (Chinese Hamster Ovary) or HEK (Human Embryonic Kidney) cells. Typical production processes are conducted in fed-batch mode over 14 days, sometimes resulting in product degradation due to proteases or other degrading enzymes in the culture broth.

### TECHNOLOGY

We have developed a stabilizer library consisting of low-cost, mostly metabolically inert, generally recognized as safe (GRAS) components. These stabilizers can significantly enhance the yield of various biopharmaceuticals by improving their stability upon excretion into the culture media. The applied stabilizer concentrations do not markedly affect viscosity or osmolarity and are designed not to interfere with downstream processing of the product. Initial screenings have demonstrated a significantly higher viable cell density and a yield improvement of our model protein, human erythropoietin fusion protein (EPOFc), in CHO-DUXB11 cells, even without optimization of stabilizer concentrations or combinations. Further optimization is expected to enhance yield increases significantly.

### OFFER

We offer a comprehensive, Design of Experiments (DoE)-based screening of stabilizing agents to achieve higher Protein of Interest (POI) production yields. Our services include:

- Testing the combinatorial effects of stabilizers.
- Scaling up to bench-top fermentation volumes.
- Assessing the impact on established downstream processes and formulation, including purification with diverse resins.
- Troubleshooting any issues encountered.

Our platform is ready for implementation in systems producing various biopharmaceuticals as end-products in CHO cells and potentially HEK cell lines. This technology can also be applied to cultivated meat production or to many proteinaceous products where stability is an issue. We are open to joint projects to exploit this technology further.

**Do not settle for inefficient protein production. Contact acib immediately to discuss your specific needs and see how our stabilizer library can improve your process.**

### acib-EXPERTS:

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### DEVELOPMENT STATUS:

Technology Readiness Level 4-5  
(Technology validated in lab /  
industrially relevant environment)

### PARTNER(S):

Graz University of Technology  
(TUG)  
University of Natural Resources and  
Life Sciences, Vienna (BOKU)

### KEYWORDS:

CHO Cells  
Biopharmaceutical Production  
Stabilizer Library Technology  
Design of Experiments  
High-Throughput Screening  
Protein Yield Enhancement  
Protein Degradation Reduction  
Cost-Efficient Biotechnology  
Fed-Batch Process Optimization

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