



Bioproduction

Gibco Efficient-Pro Medium and Feeds Evaluation Guide

Discover best practices for screening and revolutionize your mAb manufacturing workflow with Efficient-Pro

The Gibco™ Efficient-Pro™ Medium and Feed system was developed as a high-performing solution for mAb production.

Specially designed with ease-of-use in mind, Efficient-Pro can offer significant improvements to titers, cell viability, and protein quality in CHO cell lines. The animal origin-free (AOF), chemically defined, and serum-free medium helps maintain quality in your cell culture, even as you scale.

Available in both liquid and our innovative Gibco™ Advanced Granulation Technology™ (AGT™) format, this flexibility combined with greater batch-to-batch consistency means that Efficient-Pro can integrate easily into your workflow regardless of your development stage.

Utilizing a medium that is nutritionally optimized for your cell line and processes can help drive significant performance enhancements. This manual is designed to help you carry out a thorough evaluation of the Efficient-Pro medium, with technical guidance and insights to help you gain precise results in line with your specific project goals. Further, if you are experiencing any challenges, this guide can help pinpoint precisely where any problems might be arising.

Read on for more information on the media screening process or reach out to our FAS team at any stage for technical support and troubleshooting.

Evaluation preparation

Time – A typical evaluation takes approximately 2 weeks. However, an effective screening requires sufficient preparation, time for adaptations (both direct and sequential) or repeats, and result analysis. We would recommend allowing for a minimum of 6 weeks.



Resource allocation – A media evaluation, including set-up, monitoring, and analysis can be conducted by a single individual. With support from our technical team throughout, we can help you minimize process disruption.

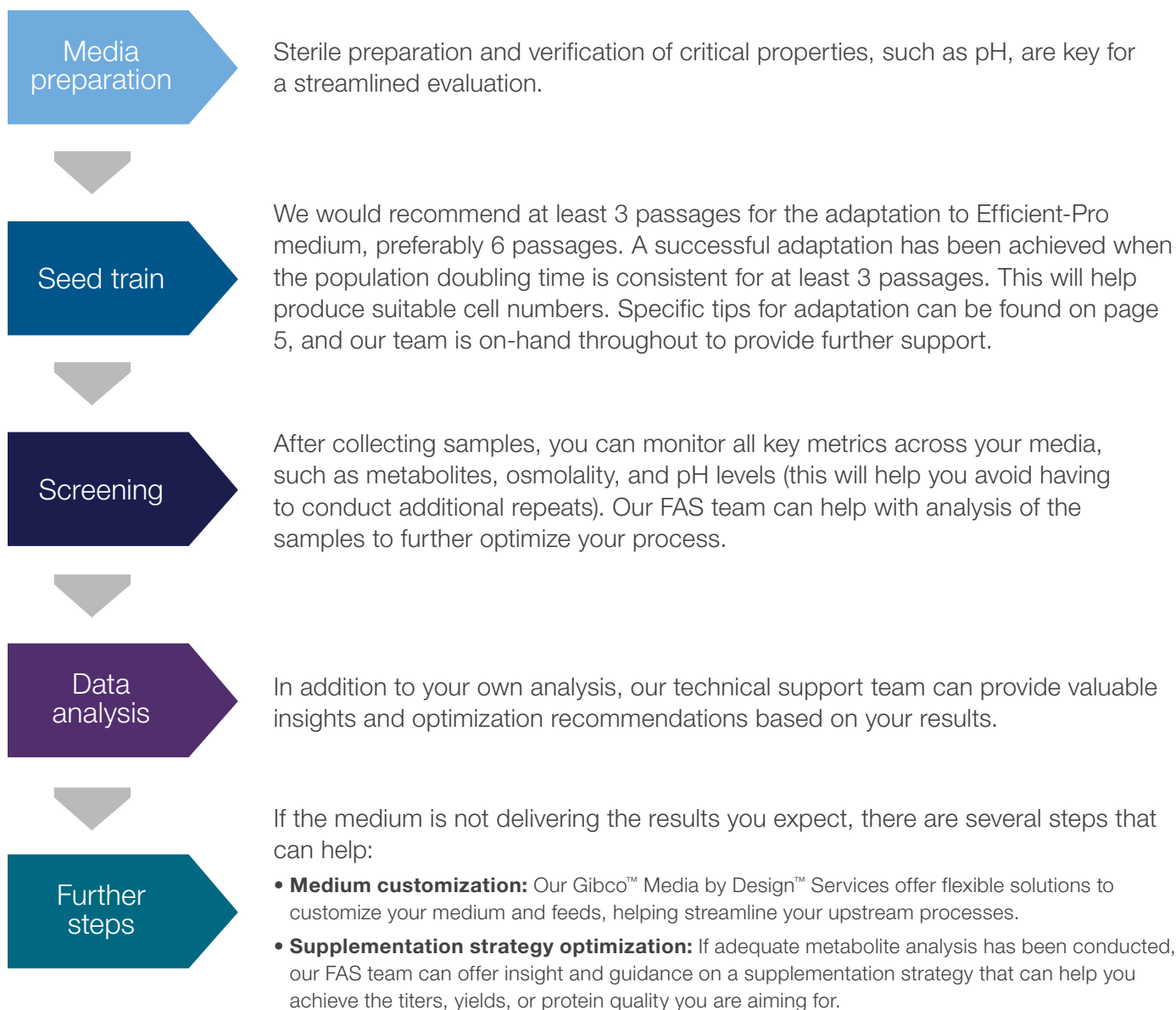
Equipment availability – In-house equipment and capabilities can impact your process. For example, timelines must be adjusted if you are screening multiple media and only have the capacity to screen them sequentially. Further, you may consider a more detailed formulation analysis to assess specific properties. Our team is on-hand to provide any additional analyses, with specialist equipment and techniques, such as spent media analysis.



Basal medium – You may choose to include additional supplements during your media screening to achieve specific results. Glutamine, insulin, and anti-clumping agents are just a few examples. Our FAS team is readily available for support with identifying the key components to add or remove.

Efficient-Pro evaluation: Step-by-step guide

While your media evaluation approach may vary depending on the number of media being screened, your internal resources, and your chosen cell line or process, the major stages can be broken down into the following steps:



Navigating adaptation: Tips and tricks

Starting formula

Adaptations can frequently fail without careful consideration of the starting medium. Adding components such as glutamine or Gibco™ GlutaMAX™ Supplement can help cells adapt more easily and helps avoid potential hurdles during adaptation.

The process

If your cell line is known to be sensitive to formulation modifications, or your current basal medium is from another supplier, we would recommend sequential adaptation. A back-up flask should also be kept running to prevent losing progress.

Sequential timing

Successful sequential adaptations rely on appropriately timing the transition to the next medium concentration. Cells must be fully adapted to one mixture of media before progressing to the next stage.

The timeline

There is no set timeline or schedule for the adaptation of the cell culture. It is important to allow cell cultures to reach their full growth potential during adaptation for accurate results.

Troubleshooting FAQs

Why am I not seeing the results I expected from Efficient-Pro?

Efficient-Pro was designed to deliver high specific productivity, so while cell densities may be lower than expected, it is still possible to achieve high titers. The Efficient-Pro feeds are highly concentrated and an adjustment in feed concentration may optimize productivity. Further, our team can help identify opportunities for boosting productivity with Efficient-Pro.

My evaluation has failed—how can I get my screening back on track?

You may decide not to proceed with a particular medium if the evaluation fails, particularly if the failure occurs in the early stages. However, the failure could be caused by the process itself. Our FAS team has extensive cell culture media experience and can offer insight and guidance, allowing you to address these challenges with minimal disruption and delays.

Why is my cell line taking so long to adapt to the medium?

Some cell lines can be more sensitive than others and can take longer time to adapt. In addition, there may be components in your existing basal formulation, e.g., insulin, that the cells are missing. These can be supplemented back in, or alternatively cells can be weaned off. If your adaptation challenges persist, get in touch with our team.

I've increased cell productivity, but the medium isn't delivering the specific project goals I'd like to achieve.

Depending on your basal formulation, your supplementation strategy is key in helping you meet your goals. Reach out to our FAS team for guidance on optimizing your supplementation strategy.

For any further questions and support, please reach out to our FAS team.



Benefits of a complete media and feed solution

By implementing a harmonized feed strategy, you may be able to optimize productivity and reach your project goals more efficiently. The Efficient-Pro medium works best as a complete medium and feed solution, specifically designed to pair with Gibco™ Efficient-Pro™ Feed 1 and Feed 2, for use with CHO-K1 and DG-44/CHO-S cell lines respectively. We have also introduced Gibco™ Efficient-Pro™ Feed 3 and Gibco™ Efficient-Pro™ Feed Enhancer—an advanced, two-part feed system designed specifically for CHO-K1 GS cell lines.

You should also consider your supplementation strategy and the nutritional requirements of your chosen cell line. There are a variety of recommendations our team can make to help you meet your bioproduction targets. We can help guide you in how to incorporate **key supplements** such as AOF peptones, growth factors including insulin and IGF, L-Glutamine, ACA, Pluronic, GS Supplement, and HT Supplement to have a targeted impact on performance.

Our team is available to support your development. Speak to one of our representatives and we can help you get the most from your medium.

 Learn more at thermofisher.com/efficient-pro

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