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Getting you to the finish line faster

Customized media solutions that meet your timeline and budget

ThermoFisher SCIENTIFIC

Gibco media solutions

As a leader in customizable media solutions for the biopharmaceutical industry, we offer a full range of services, from Gibco™ custom media design and feed formulations to optimization of existing media and feeds. Our experience, combined with our proven methodology and extensive analytical capabilities, allows us to provide customers with customized media solutions to meet their timeline and budget needs.

Let us keep your process development running smoothly

Thermo Fisher Scientific has the expertise to define the unique drivers in your cell culture research to allow for consistency in your biopharmaceutical development process. Combining this experience with our proven methodology and analytical capabilities, our media enrichment, media design, and media bioproduction services provide a variety of solutions to meet your timeline and budget needs.

Our media enrichment services include a supplement screening, base media enhancement, and feed strategy development, while our media design services feature a comprehensive media library panel screen, full base-media design, and feed development. Our scalable bioproduction media solutions offer rapid media development, pilot media production, and GMP-compliant custom media production.

Customizable solutions for your media and feed development needs

Media enrichment services

For customers seeking to enhance the performance or reduce the variability of existing media.

2–4 months	2–4 months	2–4 months
Supplement screen	Medium enhancement	Feed strategy development

Media design services

Ideal for customers looking to build new media specific to their cell lines and optimized to their application.

2–4 months	4–6 months	6+ months
Media library panel screen	Full medium design	Full medium design and feed development

Supplement screen

Our supplement screen service is ideal for customers looking to quickly improve an existing base medium. Our media design experts will screen your cell line and base medium against our supplements, providing a summary analysis and recommendation.

Medium enhancement

Our base medium enhancement service further boosts your preexisting base medium. With additional analytical testing, our media design experts will review a broader array of supplements to develop a custom nutritional supplement to meet the unique requirements of your cell line.

Feed strategy development

Our feed strategy development service is designed specifically to enhance your bioproduction process. As part of this service, we will develop a feed medium and strategy based on spent media analysis.

Media library panel screen

To find a high-performance medium quickly, our media design experts will perform a media panel screen against our rich library of proprietary media for customers with no preexisting base medium or a base medium that is performing unsatisfactorily.

Full medium design

With our full medium design services, we will work with you to understand the critical requirements and nutrient needs of your cell line to develop a specifically tailored medium from scratch.

Full medium and feed design

For customers working in fed-batch production systems, we will develop a base medium along with a feed medium and strategy. Many customers find this service helpful when moving into full-scale production.

Media bioproduction services

Services for customers interested in manufacturing bench- and production-scale media.

<10 business days	1–2 months	2–5 months
Rapid media production*	GMP pilot production	GMP custom media production

* Non-GMP pilot production; additional time needed for shipping.

Rapid media production

Our rapid, flexible, and scalable media production solution is designed specifically to meet your process development and research budgets and timelines. This service delivers liquid or powder media lots at a customizable scale within 10 days of custom specification confirmation.

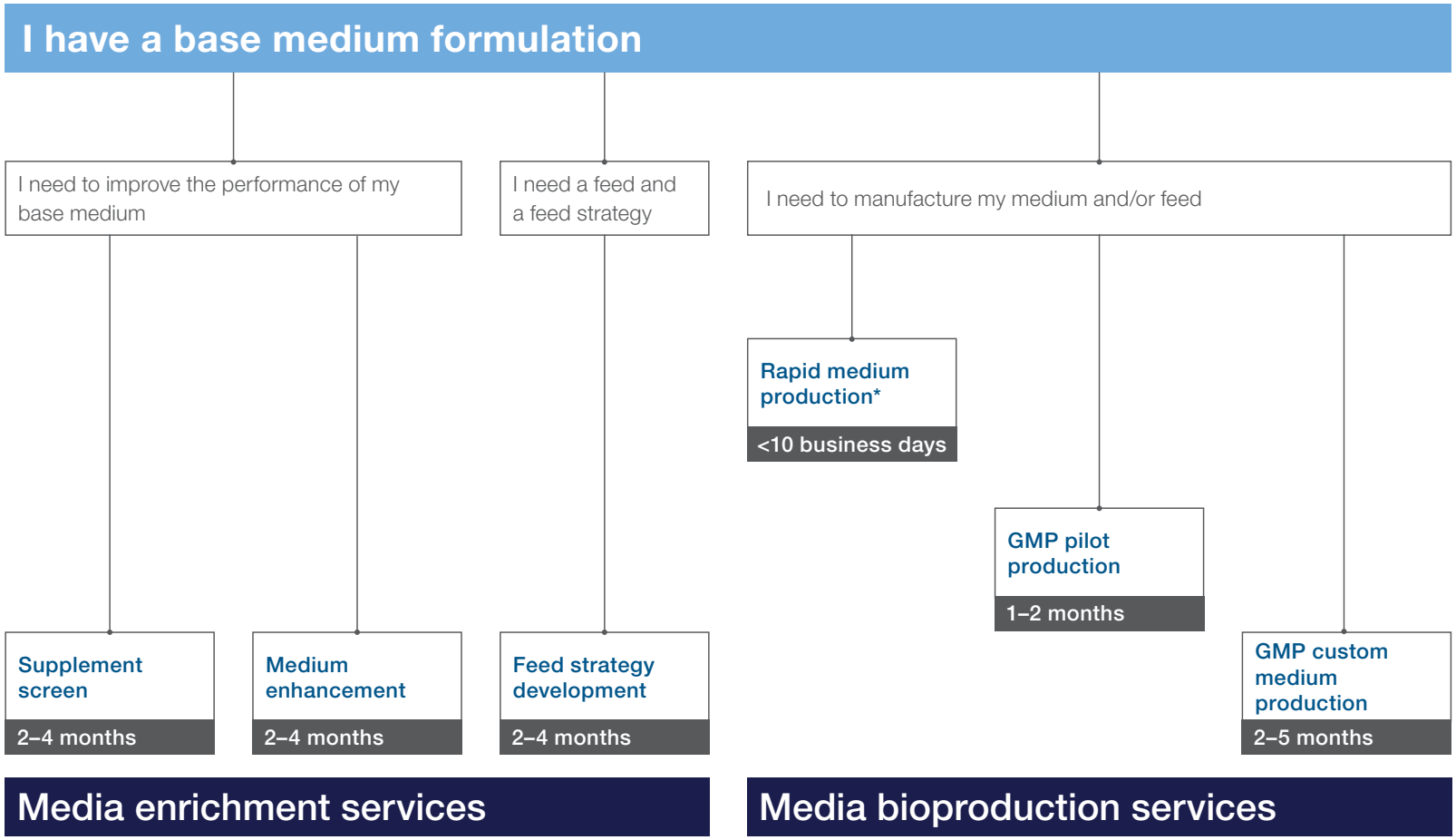
GMP pilot production and GMP custom media production

From bench to full-scale production, our GMP media production capabilities provide the flexibility and high-quality standards to meet your media production needs. Our pilot labs employ the same technology found in our full-scale GMP production facility, allowing for seamless transfers and meeting your quality requirements at each step in the production process.

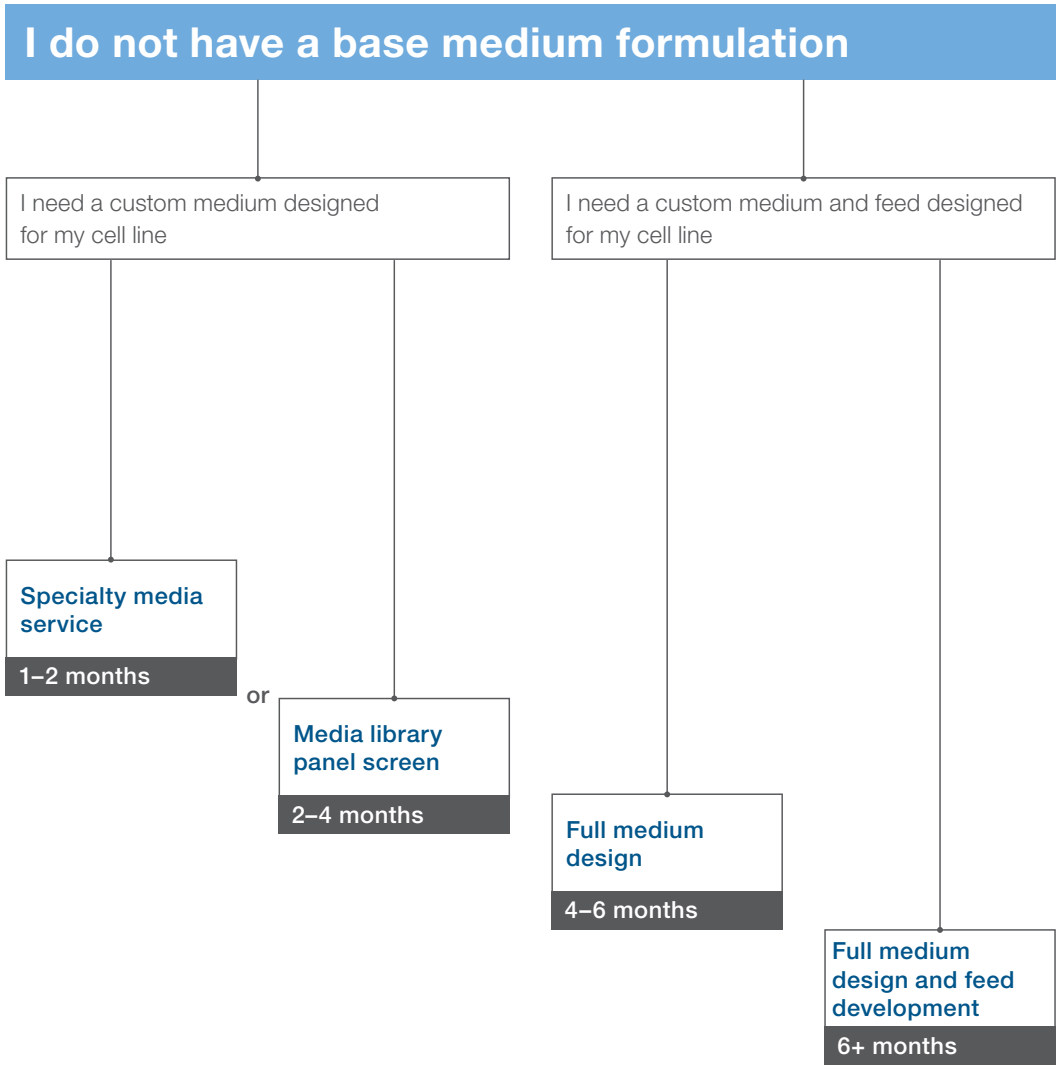
Specialty media service

This fast-turnaround service offers customers a targeted medium solution for atypical cell lines, based on our industry knowledge and expertise. Offering limited analytical testing, our media specialists provide a recommendation or a prototype medium formulation for unique and atypical cell lines within one to two months.

Which media solution works best for me?



* Non-GMP pilot production; additional time needed for shipping.



Media design services

End-to-end services and support from research through large-scale production

Case study 1

Customer base medium enhancement

Objective

A customer approached us to develop a base medium to improve cell line production and achieve an acceptable antibody charge variant profile to match an innovator drug.

Our approach

The quality of recombinant protein produced by a cell line is a critical aspect in the evaluation of the cell line's performance in a biopharmaceutical process. The cell culture medium can have a significant impact on protein quality, independent of the effects on growth and protein production. We have demonstrated through base medium screening and enhancement that changing the culture medium, as well as single components within a medium, can have a notable impact on protein quality and biological performance of the antibody.

Results

We first analyzed three distinct chemically defined (CD) media in batch culture. While the monoclonal antibody (mAb) produced in these CD media exhibited favorable charge variant profiles, the cell growth and production levels were not acceptable compared to the original medium.

Due to lower-than-required growth and production levels in CD media, the performance of peptone-containing media was additionally analyzed in batch culture. Four distinct peptone-containing media, including the original medium, were evaluated, but they were again found to have unacceptable cell growth and production.

Lastly, we enhanced cell performance and mAb protein quality in the original medium through analysis of medium composition and spent medium. Addition of CD component A to the original medium and use of CD component A as a feed during the culture were two methods that simultaneously boosted cell performance and attained the desired charge variant profile.

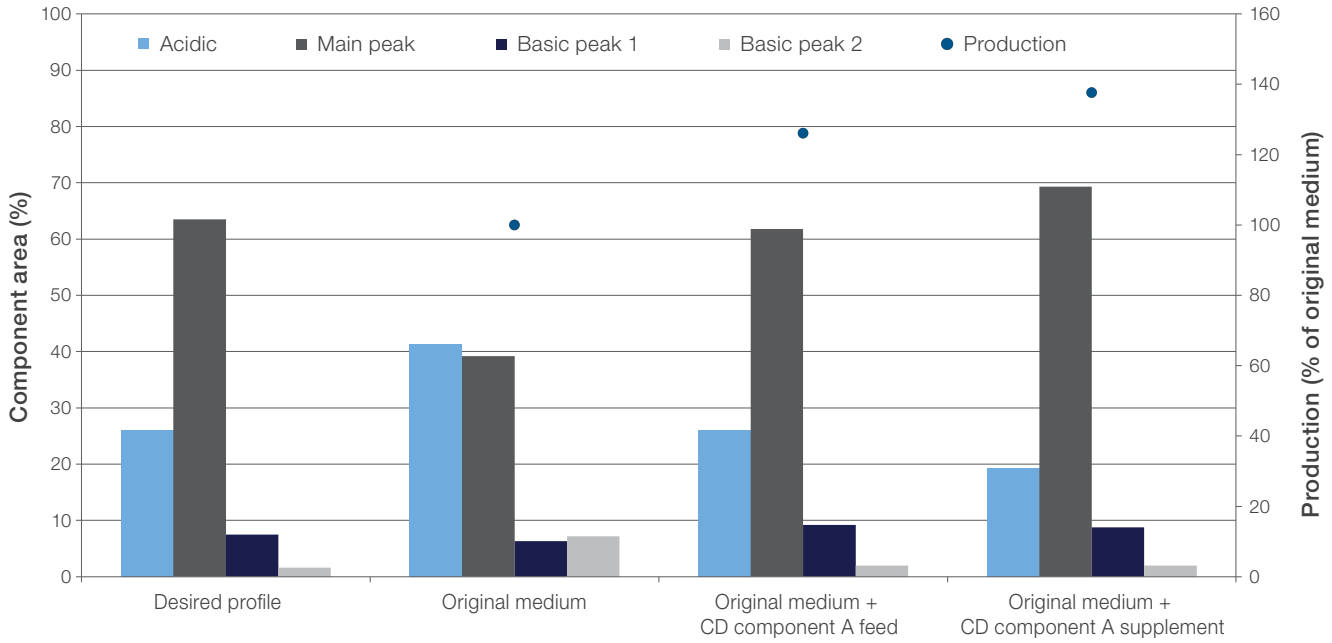


Figure 1. Evaluation of two different enhancement strategies. One strategy was to add CD component A as feed on day 5. The other strategy was to add CD component A as a supplement on day 0. Both strategies resulted in increased production levels and the desired charge variant profile.

Case study 2

Customer medium design

Objective

A customer approached us to develop a CD medium and feed strategy to enhance mAb production at least 2-fold compared to a commercial CD medium control, and maintain the glycosylation profile.

Our approach

It is widely accepted that each cell line and clone may have different nutritional requirements to achieve the highest performance in protein and growth while also providing the desired glycosylation profile. Our approach was to first identify candidate base media out of a large proprietary library of CD media. The top candidate medium was then paired with a feed to develop a feed strategy for increasing vessel sizes, while making sure the desired glycosylation profile was maintained.

Results

We first performed a library screening of more than 55 CD media against the customer cell line, using a fast deep-well plate process (Figure 2A). Eight different CD media were identified as good candidates. At this initial stage, while growth (blue bars) was not equivalent to that of the control medium, each of these media exhibited >100% increase in mAb production (diamonds) compared to the control medium. Candidate media performance was confirmed in shake flask scale-up studies. Two high-performing candidate media, 32 and 36, were selected for feed development in benchtop bioreactors. Performance of media 32 and 36 was determined in the ambr™ microbioreactor in batch and fed-batch cultures, using two different CD feed formulations (Figure 2B). While both media performed favorably, medium 36 fed with CD feed 1 generated production levels (diamonds) approximately 6-fold higher than the control medium with comparable cell growth (bars). Fed-batch performance was further demonstrated in 1 L DASGIP™ bioreactors. Medium 36 in batch culture increased production 2-fold above the control, while fed-batch culture with CD feed 1 increased production greater than 6-fold over control (Figure 2C). Glycosylation profiles were maintained in medium 36 in batch and fed-batch cultures, as shown in Figure 2D.

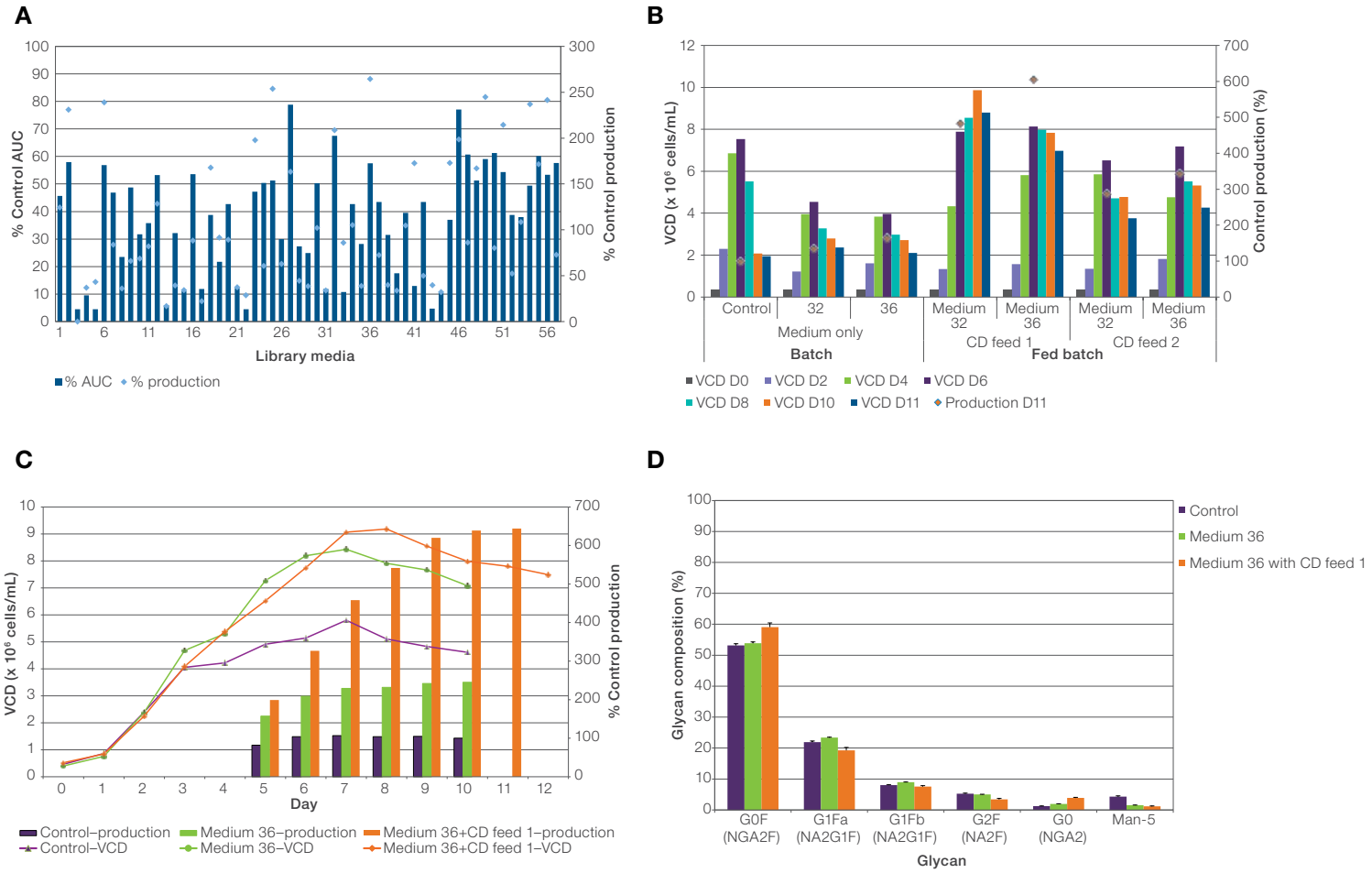


Figure 2. CD medium and feed design study. (A) CD library media screen with batch culture in deep-well plate. AUC = area under curve. **(B)** Batch and fed-batch cultures in media 32 and 36 using ambr microbioreactor. **(C)** Batch and fed-batch culture in medium 36 using DASGIP bioreactors. **(D)** mAb quality analysis using glycosylation profiles in the bioreactor.

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Find out more at **thermofisher.com/advbio**

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