

Finding the Right Media for Your Bioprocess—Should You Try Before You Buy?

Sartorius has recently acquired Xell AG, a cell culture company specialising in developing, producing, and marketing media and feed supplements, particularly for manufacturing viral vectors used in gene therapeutics and vaccines. As a result, Sartorius can now offer an expanded media portfolio to support cell culture for a variety of applications.

The new HEK media portfolio is designed for the long-term, high-performance suspension culture of HEK293 and other mammalian cell lines. Fully chemically defined and free from animal components, the media and feed in this collection are suitable for both research and commercial-scale GMP manufacturing.

The portfolio has been developed with particular attention to the production of viral vectors used in gene therapy and vaccine applications, serving our customers in this rapidly expanding market. Here, Catherine Buchere, Product Manager for Virus-Based Therapeutics at Sartorius, discusses finding the best media for your application.



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Catherine Buchere,
Product Manager,
Sartorius

What challenges are customers likely to face when developing cell lines and selecting media for the production of newer modalities, such as AAVs, lentiviruses, and vaccines?

Because these modalities are newer and are increasingly diverse, there are often knowledge gaps on how best to produce and purify the final products at the required yield or scale. Upstream process decisions include the selection of a suitable cell line and culture system to secure cell viability, maximise productivity, and improve overall process robustness.

One solution that we are really encouraging our customers to consider is transitioning their adherent cell lines to suspension culture, which is much more readily scalable. We also recommend switching from traditional serum-containing media to fully defined, serum-free media to limit lot-to-lot variability and simplify regulatory approvals.

Will these adapting cells to new culture conditions require significant optimisation time?

While the process of adapting adherent cells to suspension culture might seem like a significant hurdle, our media portfolio and protocols currently support a direct adaptation for most HEK cell

lines. Our performance data demonstrate that HEK293 cells can be rapidly transitioned to growth in suspension simply by centrifugation and media exchange, without affecting cell viability.

How can users decide which media and feed are the most suitable for their application and which should be used across different process steps?

With an increasing diversity of modalities and applications, it can be difficult to know precisely what growth conditions suit your unique process. Our HEK media portfolio is broad and covers a variety of conditions to support maximum growth and production for even the most challenging modalities, such as transient transfection and infection. They are also designed to be all-in-one solutions, meaning users don't have to use different formulas across process steps, such as during transient or stable transfection procedures.

How do customers know what media is right for them? Are such 'trial-and-error' approaches associated with increased risk?

This is true - trial-and-error might appear to be the only way to approach finding the right media and growth conditions, but with such expensive reagents and time-consuming processes, it can also be risky and cause significant delays. At the same time, you want to ensure your cell line is stable and as productive as possible, as this will improve yield, efficiency, and support process intensification in next-generation facilities. To help our customers with their medium selection process and limit risk, waste, and time, we are running a HEK Media Sample Kit Program. This free program allows users to test different formulations at once as part of your process, allowing you to identify the best formulations for your cell line, modality and process.

Sign up to the program today to get your free kit!