SARTORIUS

Product Datasheet

HEK Media and Feed Portfolio

Production media optimized for viral transfection and infection

Product Information

Sartorius' high-performing HEK media consists of comprehensive and all-in-one solutions designed to support infection and transfection of a wide range of human embryonic kidney cells (HEK293) in suspension culture.

Our portfolio maximizes productivity across various applications, including the production of viral vectors for gene therapy and vaccines as well as recombinant proteins.

Benefits

- 100% chemically defined using the highest-grade raw materials
- Require little or no adaptation from other serum-free media
- 100% free from animal components, serum, and hydrolysates
- Manufactured under ISO 9001 and ISO 13485 quality standards

Relevant Applications

- Gene therapy and gene-modified cell therapy
  - Adeno-associated viruses (AAV)
  - Lentiviruses (LV)
- Viral vector vaccines
- Recombinant proteins

Relevant Process Steps

- All-in-one solutions, from thawing, adaptation, growth, transfection, pre-complexing DNA and biologic production
- Suitable for batch, fed-batch, and perfusion processes
- Stable growth at high viability in seed train culture

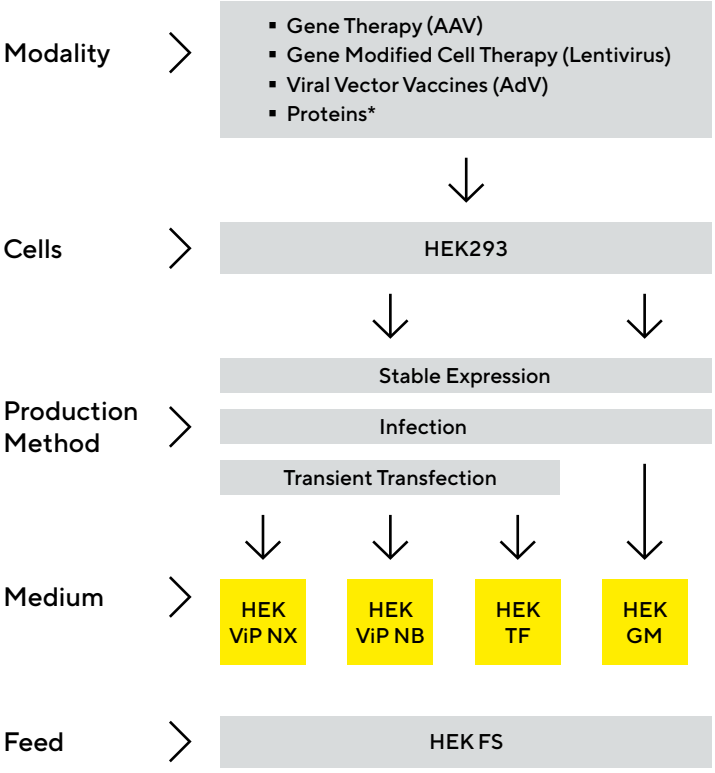
Application

Initially derived from female fetal cells in 1973, HEK293 cells are commonly used in the production of biopharmaceuticals. Their popularity also stems from their reliable growth in culture, high transfectivity, and ability to grow in a serum-free, suspension culture.

However, different HEK293 cell lineages vary in their production capabilities, and adaptation to suspension culture under serum-free conditions can differentially impact cell metabolism. These factors may result in cell line-specific requirements for nutrients and/or growth factors. This variation can dramatically decrease productivity during the key steps of growth and production. As a consequence, moving to commercial scale often requires considerable and costly optimization of media.

Sartorius' HEK293 media portfolio contains chemically defined, serum-free, animal component-free, and hydrolysates-free solutions designed and optimized to support high-density suspension culture of HEK293 and other human cell lines. The compatible feed supplement, HEK FS contains a high concentration of nutrients and is free of lipids, hydrolysates, and growth factors. It supports the superior production of viral vector and recombinant proteins in suspension culture by maintaining and extending the production capability of HEK cultures.

Simplifying Your Decision



* HEK293 media can be used for mAb or protein production

Features of the Standard Product

CD — **Chemically Defined:** The exact concentration and size of every component is known

NAO — **Non-Animal Origin:** The formulation is entirely made from non-animal origin components

FFM — For research or further manufacturing use

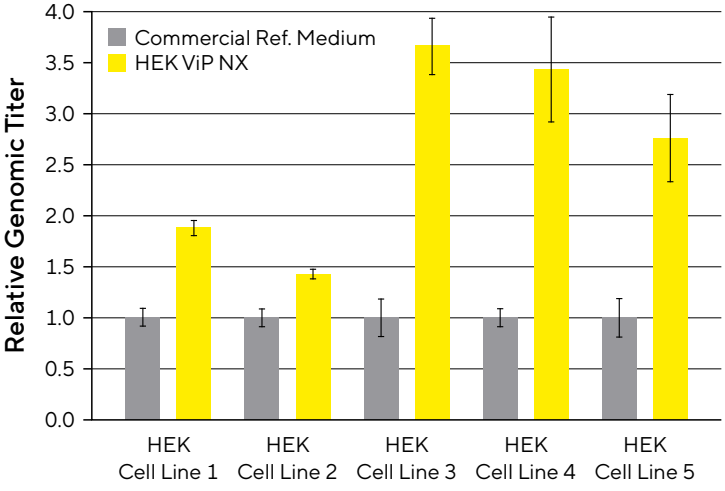
Product available in liquid (bottles & bags) format

Product available in powder format

Performance

The HEK media portfolio has the potential to increase viral titers, independent of the HEK293 cell lineage. Excellent AAV-2 genomic titers are achieved across various proprietary and commercial HEK293 cell lines grown in HEK ViP NX medium (Figure 1). Additionally, relative genomic titers were up to four times higher when cells were cultured in HEK ViP NX medium compared to a commercial reference.

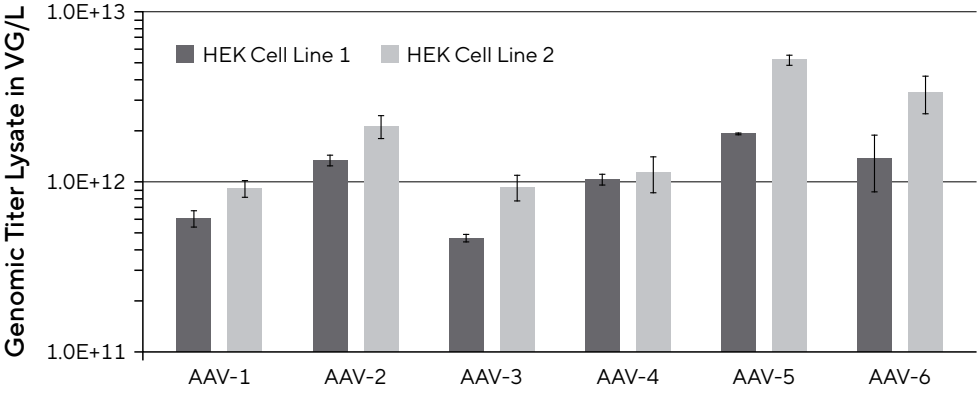
Figure 1: *Relative AAV-2 Titers*



Note. Five HEK293 cell lines were cultured with either HEK ViP NX medium (yellow) or one of the most relevant commercially available reference media (gray) (average values are depicted).

HEK ViP NX media is also high performing across different AAVs, producing comparable genomic titers of six AAV serotypes tested in two cell lines (Figure 2). This versatility is incredibly valuable for meeting the demands of highly variable processes.

Figure 2: *Genomic Titers Across AAV Serotypes*



Note. AAV titers were measured in lysates from two commercial suspension cell lines cultured in HEK ViP NX medium. Transfection of a two plasmid AAV system (Plasmid Factory) was done via PEI-MAX (Polyscoences) at a 1:4 ratio. Genomic titers, shown as viral genomes per liter (VG/L), were measured by qPCR.

Ordering Information

Item	Description	Medium | Quantity | Package	Order Number
HEK GM*	Robust and effective: Selected for stable expression with HEK cells	Liquid | 1 L Bottle	851-0001
		Liquid | 10 L Bag	851-0010BAG
		Liquid | 20 L Bag	851-0020BAG
		Liquid | 50 L Bag	851-0050BAG
		Powder & Supplement | 10 L Container**	CQV3FB4002
		Powder & Supplement | 100 L Container**	CQV3FB4004
HEK ViP NX*	Optimized for virus production: Best choice for transient expression in HEK cells	Liquid | 1 L Bottle	892-0001
		Liquid | 10 L Bag	892-0010BAG
		Liquid | 20 L Bag	892-0020BAG
		Liquid | 50 L Bag	892-0050BAG
		Powder | 10 L Container	892-0010DPM
		Powder | 100 L Container	892-0100DPM
HEK ViP NB*	HEK ViP NB is a complete chemically defined, animal-component free medium with a basic nutrient level, optimized for virus/viral vector production	Liquid | 1 L Bottle	891-0001
		Liquid | 10 L Bag	891-0010BAG
		Liquid | 20 L Bag	891-0020BAG
		Liquid | 50 L Bag	891-0050BAG
		Powder | 10 L Container	891-0010DPM
		Powder | 100 L Container	891-0100DPM
HEK TF*	Well established transfection medium: Ideal for the production of recombinant proteins and antibodies	Liquid | 1 L Bottle	861-0001
		Liquid | 10 L Bag	861-0010BAG
		Liquid | 20 L Bag	861-0020BAG
		Liquid | 50 L Bag	861-0050BAG
		Powder & Supplement | 10 L Container**	CQV3FB4007
		Powder & Supplement | 100 L Container**	CQV3FB4009
HEK293 Media & Feed FS_2 Kit	To select the best fit media for the application and the feed	Liquid | 5 × 1 L Bottle	CFV3FB4001

* Other volumes are available
** These articles would be delivered in two parts: powder & supplement

Technical Specifications

Attribute	Growth Factor	Hypoxanthine | Thymidine	Characteristics | Comparison	Production Methods
HEK GM	With	With	▪ Stable | Robust ▪ High nutrient level	▪ Infection ▪ Stable expression
HEK ViP NX	Without	With	▪ Highest nutrient level	▪ Transient transfection ▪ Infection ▪ Stable expression
HEK ViP NB	Without	With	▪ Medium nutrient level ▪ Leanest formulation (lowest number of components)	▪ Transient transfection ▪ Infection ▪ Stable expression
HEK TF	With	With	▪ Broad application	▪ Transient transfection ▪ Infection ▪ Stable expression
HEK FS_2 Feed	Without	With	▪ Feed Supplement to boost the productivity of the HEK media	▪ Transient transfection (use from 4 – 6 h post-transfection) ▪ Infection ▪ Stable expression

Peripherals and Accessories

Product Name	Description	Medium | Quantity | Package	Order Number
HEK FS_2 Feed*	HEK FS_2 Feed contains 40 g/L D-glucose; for all HEK cells	Liquid | 1 L Bottle	880-0001
		Powder | 5 L Container	880-005DPM
		Powder | 10 L Container	880-0010DPM

* Other volumes are available

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