



# HEK | ONE

## MEDIA SYSTEM

*Improved Transfection  
and Production*



## Capricorn Scientific – Your partner in cell culture

Capricorn Scientific was established in 2013 as a German manufacturer of cell culture products, for biotech and diagnostic industry. Qualified testing procedures, comprehensive traceability, and documentation guarantee the excellent and reproducible quality of our products. We have the flexibility to offer a wide range of classical and customized products for cell culture to meet the

growing demands of today's market with lower costs, shorter lead times, and personalized customer service. Our team of highly qualified and experienced specialists have been working in the field of cell culture for many years. We are highly trained, experienced, and motivated to fulfill your requests and orders in time.

**50+**  
PARTNER  
WORLDWIDE

**>180**  
PRODUCTS

**WORLD  
WIDE  
AVAILABILITY**



### Made in Germany

Our 1350 sqm controlled production plant and warehouse are based close to Frankfurt. With a short route to the international airport, our products are delivered throughout the world.

We are regularly audited and ISO certified by an independent organization to continuously improve our quality system and our standards.



# HEK293 CELLS

## *Widely Approved Human Expression System*

### **About HEK Cells**

The human embryonic kidney cell line HEK293 has the biosynthetic potential for human-like production and is currently used for manufacturing of several therapeutic proteins and viral vectors.

While initially used for adenoviral vector production, HEK293 also became one of the preferred cell lines for transient or stable protein expression. The need for proper protein folding and humanized glycosylation of therapeutic proteins has promoted the production in HEK293 cells.

### **Features of HEK293 cells**

- » Approved by EMA & FDA for human therapeutic production
- » Easily grown in serum-free suspension culture
- » Capable of producing post-translational modifications

### **HEK|ONE EXPRESSION SYSTEM**

High titer protein expression in HEK293 cells

Capricorn Scientific has developed high performance media for HEK293 cells in close cooperation with one of our biomanufacturing partners. The media are perfectly suitable for research and further manufacturing.

HEK|ONE media and feed perfectly support cultivation and production processes of stable and transient transfected HEK293 cells in serum-free suspension culture.

### **THE ADVANTAGES AT A GLANCE**

- ✓ Complete chemically defined, animal component-free, and protein-free system
- ✓ Supports growth of high density HEK293 cultures
- ✓ Enables sustained, high level expression of recombinant proteins
- ✓ Promotes transfection efficiency and production



### **DID YOU KNOW?**

Now you can order our products directly via webshop on our new homepage

[www.capricorn-scientific.com](http://www.capricorn-scientific.com)

# HEK|ONE

## Media System



### What is the difference between HEK|ONE S and HEK|ONE T?

HEK|ONE S excellently supports the general growth and production of HEK293 cells in stable cell lines or post-transfection.

HEK|ONE T is specifically designed to support an efficient transfection in HEK293 cells for example with cationic transfection reagents like PEI.

### + HEK|ONE S

HEK|ONE S is a chemically defined, animal component-free, and protein-free medium, supporting cell growth and production of HEK293 cells and other human cell lines. It was developed for high performance cultivation in suspension and expression of recombinant proteins, viruses, and antibodies in stable cell lines or post-transfection.

- » Effective medium for stable growth
- » Highest viability and production
- » Cat.No. HEKS-1000ML; free sample available

### + HEK|ONE T

HEK|ONE T is a chemically defined, animal component-free, and protein-free medium, designed for efficient transfection and high density suspension culture of HEK293 cells and other human cell lines. It is highly suitable for transient protein expression and viral vector production. HEK|ONE T is compatible with cationic transfection reagents, such as polyethylenimine (PEI). It can be used in research and further manufacturing.

- » Perfect medium for transfection e.g. (PEI)
- » Optimized for growth and production processes
- » Cat.No. HEKT-1000ML; free sample available

### + HEK|ONE FEED

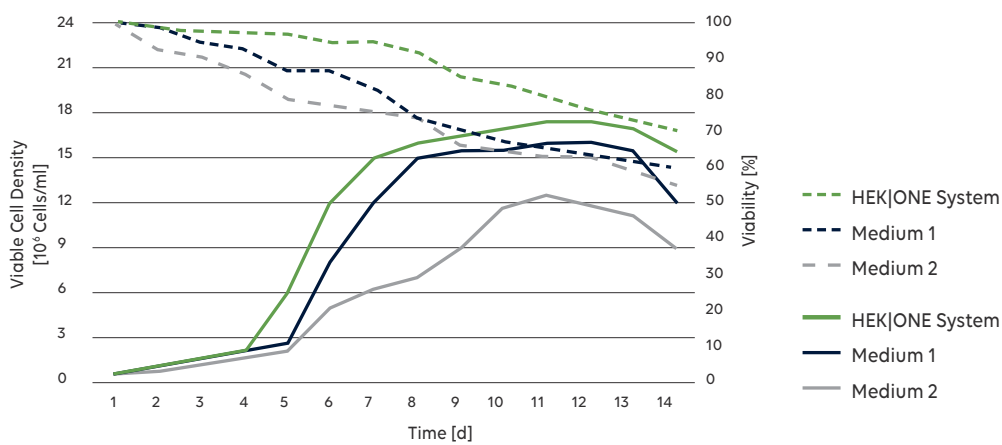
HEK|ONE Feed is a chemically defined, animal component-free, and protein-free feeding supplement with highly concentrated nutrients, increasing the productivity of HEK293 cells and other human cell lines. It supports superior production of recombinant proteins and antibodies in suspension culture by maintaining and extending cell growth and production capability. HEK|ONE Feed is compatible with HEK | ONE S as well as HEK|ONE T for stable and transient protein expression.

- » Boosts fed-batch processes
- » Supports superior yields with human cell cultures
- » Cat.No. HEKF-1000ML





## FEEDING PERFORMANCE



**Graph 1:**  
The Viable Cell Density and Viability were tested in a HEK293 feeding regime. The performance of our new HEK|ONE system were compared against two commercially available media.

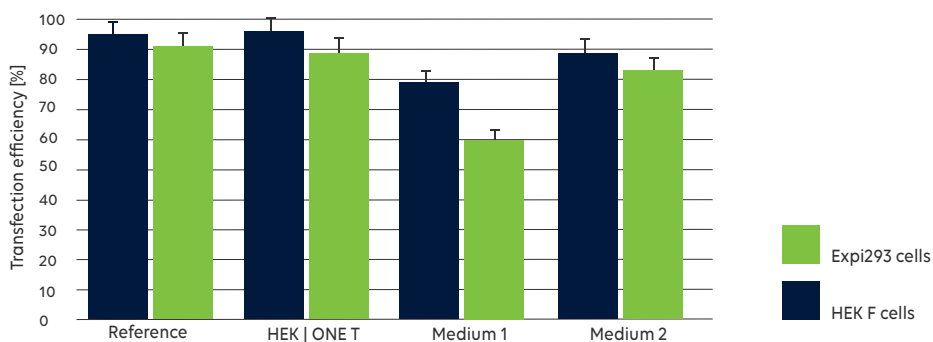


### Is a special feeding strategy for HEK|ONE Feed recommended?

The feeding strategy depends on the metabolic activity of your cells. Conventionally, the feeding starts at day 2 and can be continued as follows for low or high consuming cells:

DAYS	LOW	HIGH
0	0 %	0 %
1	0 %	0 %
2	3 %	3 %
3	4 %	6 %
4	6 %	10 %
5	10 %	10 %
6 until end	10 %	12 %

## TRANSFECTION EFFICIENCY BY GFP EXPRESSION



**Graph 2:**  
We tested the transfection efficiency of our newly developed HEK|ONE T against two media on the market and a suitable reference in a GFP expression experimental outline using two different cell lines.



DONE WITH HIGHEST PRECISION

# POWDER HANDLING

We have implemented a state-of-the-art pin mill and blending technology for manufacturing of powder media for our biopharmaceutical customers. This latest technology of milling and blending thus provides our customers with full homogeneity of powder media from 100 L up to 40000 L batch sizes. For larger batches we work closely with a GMP contract blending provider to enable batch sizes up to 250000 L.

The high air flow rates feature temperature-controlled grinding to minimize the impact on temperature-sensitive components. The end-product fineness features a controlled particle size. The cut off particle size is precisely defined for excellent media solubility. The result is a high quality, free-flowing, easy to dissolve, and fully homogenized powder. The whole environment is humidity, temperature and particle controlled by the newest technology.

## MANUFACTURING PROCESS

- » Full documentation from raw material to final product
- » Defined and homogenous milling and blending
- » Excellent solubility of the powder media

## VOLUME SCALABILITY

- » Lot sizes from 100 L to 40000 L
- » Secured scale up process
- » Cost-efficient process

## CUSTOMIZED POWDER & FORMULATION

- » We offer a range of media and buffer solutions from small scale to large scale in powder format
- » Customization of special formulations with flexible packaging and delivery options is part of our service



TRANSPORT SYSTEMS FULLY CUSTOMIZABLE

# LIQUID HANDLING

Our disposable bag systems are designed to maintain the integrity of your cell culture medium or buffer solution. Each technical parameter is fully customizable and can be adapted towards your system.

The bioprocess bag systems protect the integrity of your cell culture. They come with standard and customized options for a wide range of applications, sizes, and connector systems. These systems are part of our comprehensive range of sterile products to fully meet your needs and include robust euro boxes, stainless steel or HDPE- containers, roller plates, and special assemblies.

We use disposable single-use bag systems for the secure and reliable transportation of our cell culture products. The resins used in the manufacturing of our bags are optimized to ensure excellent and reproducible growth. The thickness, strength, and flexibility of these bags make them suitable for all process steps and reduce the risk of damage due to inappropriate handling.

Our products are delivered in 2D pillow bags for unit sizes up to 50 L, and in 3D cubic bags for larger unit sizes up to 1000 L.



## BIOCOMPATIBILITY

- » Cell culture approved and validated packaging systems
- » Validated through comprehensive studies on stability, extractable and leachable contaminants, and an in depth toxicological assessment

## VOLUME SCALABILITY

- » From 5 L up to 1000 L
- » Single-use bags for fluid management

## INDIVIDUAL CONFIGURATION

- » Fully aligned to the requirements of your process
- » Broad spectrum of connectors, tubing, and packaging systems



**ORDER**  
*Information*

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## WHY US?

### » Your partner in cell culture

We are a company dedicated to cell culture. Our specialists offer their experience to support your manufacturing processes.

### » Competence, commitment, and improvement

Our ISO 9001:2015 Certification confirm that we are regularly audited and certified by an independent organization to continuously improve our quality system and our standards, processes, and products.

### » Fast and efficient order processing

Secured just-in-time delivery due to short administrative channels and good knowledge on product quality, stability, and delivery condition.

### » Customized production and development

We design your media according to your recipe or create innovative solutions that can improve the performance and efficiency of your specific processes.

Your distributor:



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