

Process for Success
CHO | ONE
Media System™

Expression Media
for Fed-Batch Culture



Culture for Life

Capricorn Scientific as a young established cell culture company presents a new media system for CHO cells in fed-batch culture.

We represent scientific innovations and flexible capabilities for optimization and production for the benefit of our biopharmaceutical customers.

We know your demands and we will work with you to achieve fast results in your processes. Competition in the development of biosimilars and new therapeutics is increasing dramatically and we understand the need and urgency to move your products quickly through the development process.

Our advanced formulation, CHO|ONE Media System™, was developed to provide the high performance and vast protein yields that you require. A four year process of Design of experiments (DoE) resulted in a high performance medium with outstanding expression capabilities.

The new CHO|ONE Media System™

The innovative CHO|ONE Media System™ was designed for small- and large-scale protein production using Chinese Hamster Ovary (CHO) cells. These robust cells are used for the industrial production of a variety of recombinant proteins requiring complex post-translational modifications and correct protein folding.

The CHO|ONE Media System™ is highly suitable for fed-batch cultures. It improves the yield and concentration of recombinant proteins through optimization

of a selection of essential nutrients and growth promoting factors. The CHO|ONE Media System™ was especially designed in close cooperation with our biopharmaceutical cooperation partner using CHO-S, CHO-DG44 and CHO-K1 cell lines.

The system keeps the production of stress-related metabolites such as lactate and ammonia at an absolute minimum during the entire procedure of your fed-batch culture.



- ✓ Optimized components in ready-to-use kit
- ✓ Chemically defined
- ✓ Special medium for seed and adaptation
- ✓ Various individual packaging systems available
- ✓ Technical hotline with extensive support

CHO|ONE Media System™

Product Quality and Consistency

The CHO|ONE Media System™ was designed to balance the expression and the product quality from the beginning of the development process through the entire upscale process into clinical production.

High productivity can lead to a loss of product quality and product consistency. The creation of incomplete or malformed proteins, which may cause extended time to clinical trials and increased development cost, is significantly reduced with the use of our medium.

Media System Components

The CHO|ONE Media System™ contains the core medium CHO|ONE E, CHO|ONE A, and two corresponding feed supplements, which complete the system.

The CHO|ONE Media System™ is a fully scalable system and applicable for volumes up to 1000 L. The medium shows unsurpassed growth kinetics and expression rates in small scale as well as in large scale applications.

The CHO|ONE Media System™ is available in liquid and powder form and is 100% chemically defined in compliance with regulations related to virus safety.

CHO|ONE Media System™ Starter Kit



500 ml CHO|ONE A

Medium for seeding and adaptation



500 ml CHO|ONE E

Expression medium for high yield results



2 x 100 ml CHO|ONE Feed 1

Highly concentrated amino acids



2 x 10 ml CHO|ONE Feed 2

Formulation of selected amino acids

CHO|ONE A – Adaptation in one step

Time-consuming stepwise adaptation is usually not required due to the adaptation medium CHO|ONE A. CHO|ONE A allows the cultivation or adaptation of all recombinant CHO cells in small-scale shaker bottles or spinner flasks. In addition, its formulation simplifies and shortens the time-consuming process of Seed and Inoculum Train.

CHO|ONE E – Expression at its best

CHO|ONE E allows the cultivation of recombinant CHO cells for fed-batch cultures in spinner flasks or large-scale bioreactors. The medium is optimized for midsize and large-scale culture in combination with Capricorn Scientific's unique supplements CHO|ONE Feed 1 and CHO|ONE Feed 2.

CHO|ONE Feed 1 and Feed 2 – The ideal combination

CHO|ONE Feed 1 and Feed 2 are additives especially matched to the expression medium CHO|ONE E. CHO|ONE Feed 1 contains high concentrated amino acids, vitamins, salts, trace elements and a carbon source. CHO|ONE Feed 2 is a balanced formulation of selected amino acids in a concentrated form.

Individual Additives

On demand additional supplements like insulin cover individual parameters. For fast-growing CHO cells with higher carbon consumption, Capricorn Scientific offers also a stock solution of glucose for further supplementation. L-Glutamine must be added to the medium before use.



Service at its Best

Our goal is to reduce the time required to develop and produce biomolecules for clinical trials through:

- ✓ Fast adaptation and robust upscaling with our media
- ✓ Development of scalable manufacturing processes
- ✓ Providing of optimized packaging systems for individual applications

Capricorn Scientific offers a hotline for any further support you may need. We know the challenges in process development and provide support and solutions.

Quality under Control

Performance and Consistency

We ensure safety for our biopharmaceutical customers. Full transparency, traceability and documentation of the raw materials in use are mandatory to fit the requirements of the biopharmaceutical industry.

All ingredients of our CHO|ONE Media System™ align with the current Ph. Eur. 9. Every step of the production process is fully documented to minimize possible batch to batch variations.

- ✓ Powder manufactured under GMP
- ✓ Audited suppliers for raw material
- ✓ Consistency and homogeneity batch by batch
- ✓ Comprehensive documentation

Individual Optimization

Capricorn Scientific has a close relationship with UGA Biopharma, Germany, an experienced company for services throughout the workflow, such as contract development of upstream processing (USP), downstream processing (DSP) and analytics. Together as a combined force, we develop solutions for our customers for each individual problem.

- ✓ Single cell cloning
- ✓ Clone evaluation
- ✓ Media optimisation
- ✓ Scale-up

We provide you with a complete service, from the adaptation of your cell clone, through the scale-up process right up to the clinical phase of your product. Quality, reliability and traceability of the process with safe supply chain management included are our commitment to your full satisfaction.



Ordering Information

Product	Volume		Cat. No.
CHO ONE Media System™, Starter Kit	500 ml	CHO ONE A	CHO-K1
	500 ml	CHO ONE E	
	200 ml	CHO ONE Feed 1	
	20 ml	CHO ONE Feed 2	
CHO ONE Media System™ Expansion Kit	5000 ml	CHO ONE E	CHO-K2
	2500 ml	CHO ONE Feed 1	
	250 ml	CHO ONE Feed 2	
CHO ONE A, Adaptation Medium, w/o Insulin, w/o L-Glutamine, with Pluronic™, sterile-filtered	500 ml		CHOA-500ML
CHO ONE E, Expression Medium, w/o Insulin, w/o L-Glutamine, with Pluronic™, sterile-filtered	500 ml		CHOE-500ML
	1000 ml		CHOE-1000ML
CHO ONE Feed 1, Supplement for CHO cells, w/o Insulin, w/o L-Glutamine, sterile-filtered	100 ml		CHOF1-100ML
	500 ml		CHOF1-500ML
CHO ONE Feed 2, Supplement for CHO cells, w/o L-Glutamine, sterile-filtered	10 ml		CHOF2-10ML
	50 ml		CHOF2-50ML

Product	Volume	Recommended concentration	Cat. No.
L-Glutamine Solution (200 mM)	100 ml	6 mM (CHOA & CHOE)	GLN-B
Recombinant human Insulin Solution (5 mg/ml)	5 ml	5 mg/l (CHOA & CHOE)	INS-K
		10 mg/l (CHOF1)	
Glucose Solution (250 g/l)	50 ml	> 2 g/l	GLC-F

*Pluronic™ is a registered trademark of BASF.

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