Cell Boost™ 7a and 7b supplements

HYCLONE™ MEDIA AND SUPPLEMENTS

HyClone™ Cell Boost™ 7a and Cell Boost™ 7b supplements are intended for use in combination with HyClone™ ActiPro™ and ActiSM™ media as part of the ActiPro™ cell culture system formulated to provide high yields of recombinant proteins in processes when using Chinese hamster ovary (CHO) cell lines. They are available as a convenient ready-to-use liquid feed solution or as a dry powder concentrated format to be hydrated before use (Fig 1). Cell Boost™ 7a and 7b supplements are chemically defined (CD), animal-derived component-free (ADCF), and optimized for high-yield protein production in fed-batch processes. Cell Boost™ 7a and 7b supplements do not contain any growth factors (such as insulin), peptides, hydrolysates, phenol red, or 2-mercaptoethanol, ensuring batch-to-batch consistency and increased cell culture process efficiency.

The ActiPro™ system of media and supplements is designed with adaptation and production in mind. The ActiPro™ system is suitable for general biomanufacturing with CHO cell lines such as CHO-GS, CHO-K1, CHO-DG44, and CHO-S.

Features and benefits

- Demonstrated high yields of recombinant proteins (e.g., mAbs > 5 g/L) in fed-batch processes.
- Chemically defined ADCF formulations.
- Concentrated feeds that complement each other and are used together.
- Accompanied with detailed protocols for use to maximize output.

Cell Boost™ supplements are used as an essential part of your cell culture feed strategy to enhance cell culture performance and increase product yield. Cell Boost™ 7a and 7b supplements are intended for use together in defined concentrations.

The supplements should be added to the cultivation vessel as individual solutions and should not be mixed in advance as this will cause precipitation. The recommended ratio of Cell Boost™ 7a to 7b is 10 to 1 (v/v) (example feeding strategy Cell Boost™ 7a at 3% and Cell Boost™ 7b at 0.3%). The total amount of feed added and the specific feeding regime will need to be adjusted according to the nutritional requirements of each specific clone. The supplements are available as a powder or in a ready-to-use liquid format for research and process development. The liquid feed supplements meet testing specifications and are stable up to 12 months (mo) in PETE bottles and 9 mo in bioprocessing bags at 2°C to 8°C (Fig 2).



Fig 1. ActiPro™, ActiSM™, and Cell Boost™ 7a and 7b are designed for high yields of recombinant proteins in fed-batch culture processes with CHO cells.

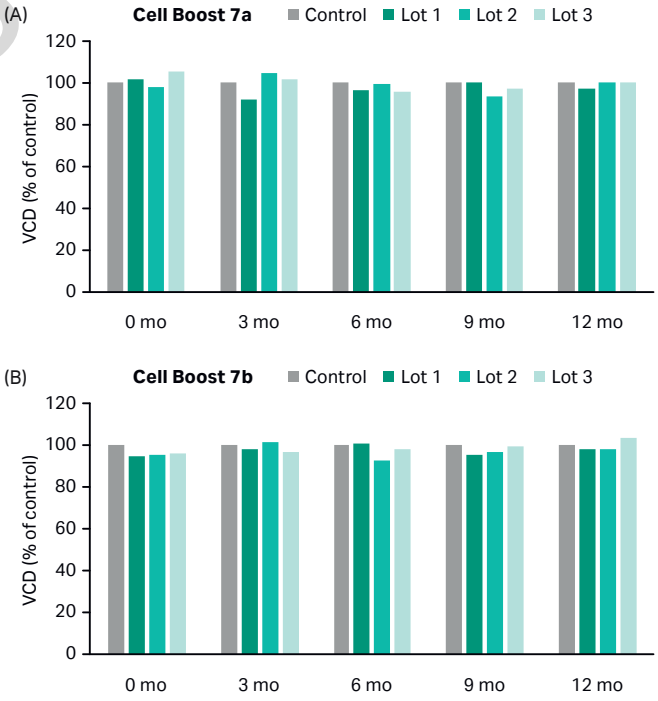


Fig 2. Stability study testing of the Cell Boost™ 7a (A) and 7b (B) liquid feed supplements was performed using CHO-S cell line to determine viable cell density (VCD) compared with control (freshly hydrated powder). The study was conducted using three separate batches of Cell Boost™ 7a and 7b liquid feed supplements stored at 2°C to 8°C and used in fed-batch cultures of CHO-S cells 0, 3, 6, 9, and 12 mo after preparation.

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Specifications

Cell Boost™ 7a and 7b supplements specifications for liquid feed solution and dry powder formats:

- Protein-free
- Growth factor-free
- Phenol red-free
- 2-mercaptoethanol-free
- Hydrolysate-free
- Chemically defined and ADCF formulated

Cell Boost™ 7a supplement

Cell Boost™ 7a supplement has a pH close to neutral and contains amino acids, vitamins, salts, trace elements, and glucose.

Cell Boost™ 7b supplement

Cell Boost™ 7b supplement has an alkaline pH and is a concentrated solution of amino acids.

Safety declaration

Cell Boost™ 7b supplement is a hazardous chemical:

- Causes skin irritation
- Causes severe eye irritation
- Can cause respiratory irritation

Please take appropriate safety precautions prior to using Cell Boost™ 7b supplement.

1. Wear protective gloves
2. Wear eye or face protection
3. Avoid breathing dust

If inhaled, move the individual to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or physician if you feel unwell.

Store Cell Boost™ 7b supplement in a locked location.

Dispose contents and container in accordance with all local, regional, national, and international regulations.

Shelf-life

Cell Boost™ 7a and 7b liquid feed supplements stored in PETE bottles have a shelf-life up to 12 mo when stored at 2°C to 8°C.

Cell Boost™ 7a and 7b liquid feed supplements stored in bioprocess bags have a shelf-life up to 9 mo when stored at 2°C to 8°C.

Please refer to the product label for the expiry date of your shipment.

Storage

Store Cell Boost™ 7a and 7b liquid feed supplement at 2°C to 8°C, protected from light. In addition, powder supplement should be stored in a dry environment, protected from light and stored at 2°C to 8°C.

Preparation note

Cell Boost™ 7a and 7b powder supplements can be conveniently reconstituted using single-use mixers, such as the Xcellerex™ XDM mixers (Fig 3).



Fig 3. XDM Quad Mixing System, with a powerful motor and magnetically locked impeller, effectively mixes even highly viscous materials.

Product handling

Store powder supplement protected from moisture in a tightly sealed container.

Store the liquid feed supplement at 2°C to 8°C, away from light.

General culture recommendations

Cell Boost™ 7a and 7b supplements are used as an essential part of your cell culture feed strategy and should be used together in defined concentrations to enhance cell culture performance and increase product yield.

- Cultures should be incubated at 37°C in a 7.5% CO_2 environment.
- Maintain adapted cells by establishing a mid-logarithmic growth phase subculturing schedule.
- Suggested seeding density of cultures 3.0 × 10^5 cells/mL; viability should be > 90%.

Process conditions

ActiPro™ medium and Cell Boost™ 7a and 7b supplements are recommended for use in a CO_2 atmosphere. Equilibration of ActiPro™ media in 7.5% CO_2 will result in a starting pH of 7.15 ± 0.05. During the cultivation, pH control can be managed by varying the CO_2 concentration or by addition of base such as $NaHCO_3$ or NaOH. The culture temperature should be adjusted according to the requirements of the specific clone or target product. ActiPro™ medium and Cell Boost™ 7a and 7b supplements have demonstrated excellent results both under constant temperature conditions and in biphasic processes comprising a shift to a lower temperature.

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Custom production

Formulations and delivery systems can be customized to your specific process requirements or optimized to maximize process yields.

Rapid Response Production (RRP)

Our RRP program manufactures up to 200 L of your custom prototype formulation within seven working days of your request. Use our RRP service to expedite the development and testing of custom media for your biopharmaceutical manufacturing process.

Related products

Product specifications for Cell Boost™ 7a and 7b supplements and related products are listed in Table 1.

Table 1. Product specifications for ActiPro™ media and supplements

Specification	ActiSM™	ActiPro™	Cell Boost™ 7a	Cell Boost™ 7b
L-glutamine	-	-	-	-
Glucose	Y	Y	Y	-
Phenol red	-	-	-	-
Proteins	-	-	-	-
Hydrolysates	-	-	-	-
2-mercaptoethanol	-	-	-	-
Poloxamer 188	Y	Y	Y	-

ActiSM™ medium

ActiSM™ is a lean, chemically defined ADCF medium that does not contain glycine, hypoxanthine, or thymidine. This medium was developed to be used as the first step in adapting cells to the ActiPro™ system of media and supplements. Once cells have undergone the adaptation process, we recommend using ActiPro™ medium for production.

ActiPro™ medium

ActiPro™ is a rich, chemically defined, and ADCF medium that does not contain hypoxanthine or thymidine and has been formulated for use in high-yield batch or fed-batch processes.

Technical support

Our cell culture medium specialists and technical support functions are happy to discuss your needs in getting the most out of your culture. In addition, we have an extensive service offering to help with, for example, process development, optimization, and scale-up. Please contact your local sales representative to learn more about the services we offer. To find a certificate or a MSDS for a specific product, please visit cytiva.com/certificates.

Ordering information

Product	Pack size	Format	Product code
HyClone™ Cell Boost™ 7a liquid supplement	500 mL bottle	Liquid	SH31119.01
	1000 mL bottle	Liquid	SH31119.02
	1 L bag*	Liquid	SH31119.03
	5 L bag*	Liquid	SH31119.04
	10 L bag*	Liquid	SH31119.05
	20 L bag*	Liquid	SH31119.06
	50 L bag*	Liquid	SH31119.07
	100 L bag*	Liquid	SH31119.08
	200 L bag*	Liquid	SH31119.09
HyClone™ Cell Boost™ 7a dry powder supplement	1 L bottle*	Powder	SH31026.07
	5 L bottle	Powder	SH31026.01
	10 L bottle*	Powder	SH31026.02
	25 L bottle*	Powder	SH31026.03
HyClone™ Cell Boost™ 7b liquid supplement	100 mL bottle	Liquid	SH31120.01
	500 mL bottle	Liquid	SH31120.02
	1000 mL bottle	Liquid	SH31120.03
	1 L bag*	Liquid	SH31120.04
	5 L bag*	Liquid	SH31120.05
	10 L bag*	Liquid	SH31120.06
	20 L bag*	Liquid	SH31120.07
	50 L bag*	Liquid	SH31120.08
	100 L bag*	Liquid	SH31120.09
	200 L bag*	Liquid	SH31120.10
HyClone™ Cell Boost™ 7b dry powder supplement	0.5 L bottle	Powder	SH31027.01
	1 L bottle*	Powder	SH31027.07
	5 L bottle*	Powder	SH31027.02
	10 L bottle*	Powder	SH31027.04

Related products	Pack size	Format	Product code
HyClone™ ActiPro™ powder medium	5 L	Powder	SH31037.01
	10 L*	Powder	SH31037.02
	25 L*	Powder	SH31037.05
HyClone™ ActiPro™ liquid medium	500 mL	Liquid	SH31039.01
	1000 mL	Liquid	SH31039.02
	1 L poly bag*	Liquid	SH31039.03
HyClone™ ActiSM™ powder medium	5 L	Powder	SH31038.01
	10 L*	Powder	SH31038.02
	25 L*	Powder	SH31038.05
HyClone™ ActiSM™ liquid medium	500 mL	Liquid	SH31040.01
	1000 mL	Liquid	SH31040.02
	1 L poly bag*	Liquid	SH31040.03
L-glutamine 200 mM	100 mL		SH30034.01
	500 mL		SH30034.02
	500 g*		SH30336.03

Note: powder product quantity is shown as the final volume of after powder reconstitution.
*Item is made to order. Lead times and minimum order quantities apply.

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