

CELL | ST™

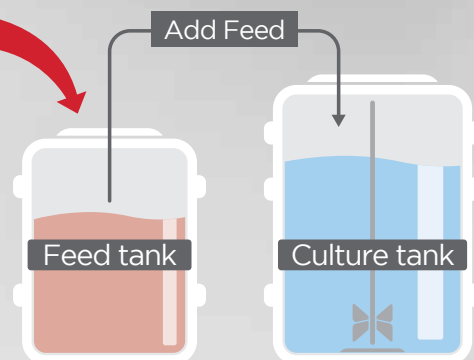
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CELLiST™ AminoSupplement Cys1/Cys2

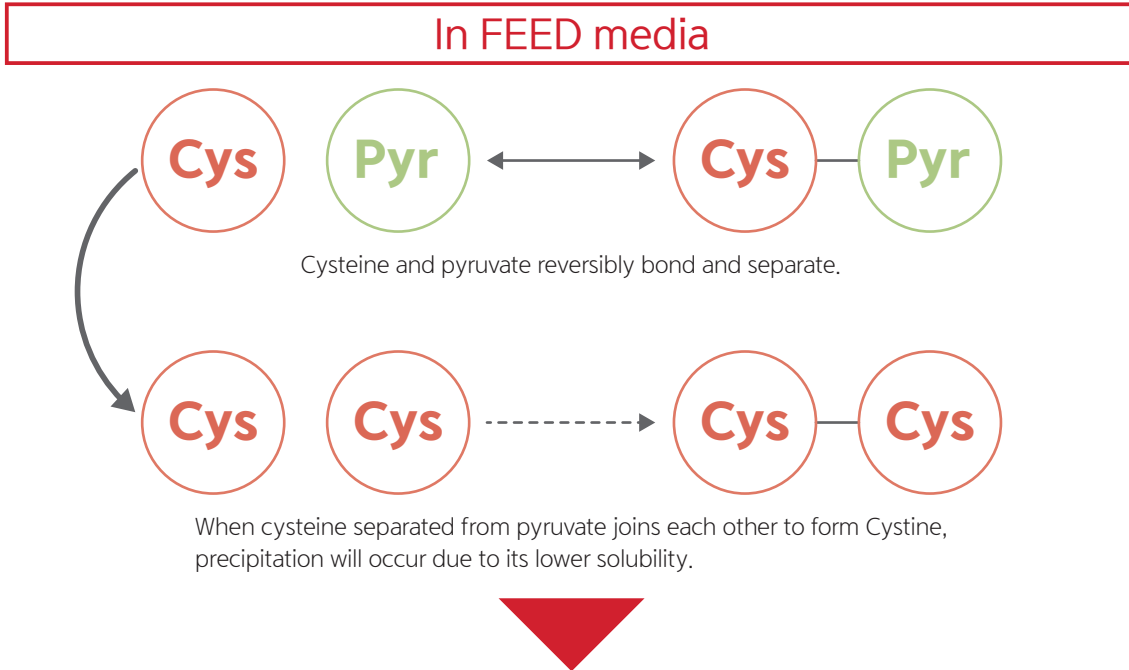
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# AminoSupplement Cys1/Cys2 can help customers improve titer and reduce initial & running costs for cell culture

You just add  
AminoSupplement Cys1/Cys2  
into feed media

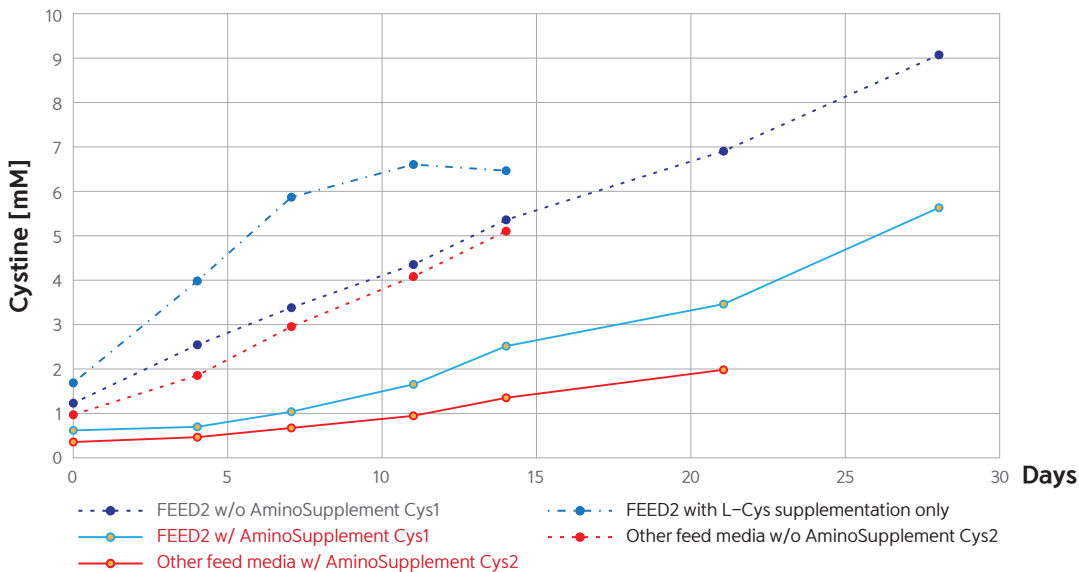


## Mechanism of AminoSupplement Cys1/Cys2



**Our proprietary formulation inhibits cystine formation/ precipitation and enhances the Cys source concentration in the media.**  
 (See the figure at the bottom)

## Cystine formation during liquid media storage



## Product information

We have product lineup to cover all types of feed media.

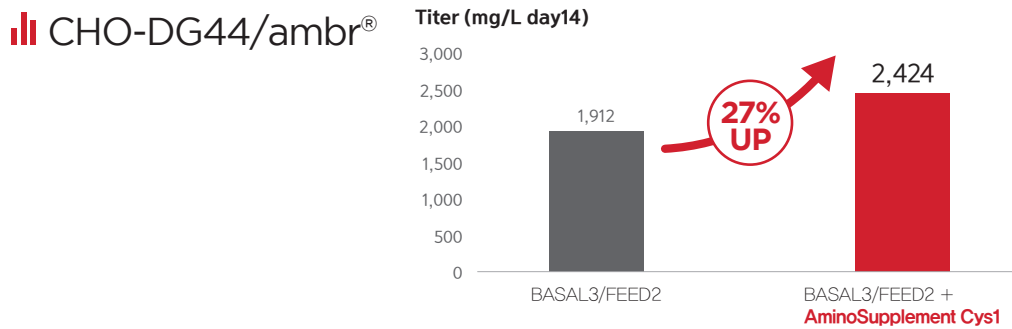
Product name	Main Target	Format	Catalog No.	Package type	Qty.
AminoSupplement Cys1	Single-agent feed media users	Powder	225SP1-1L	1 L Aluminum pouch	6.61 g
			215SP1-50L	50 L Plastic Drum	331 g
AminoSupplement Cys2	Two-agent feed media users	Powder	225SP2-1L	1 L Aluminum pouch	17.0 g
			215SP2-25L	25 L Plastic Drum	425 g



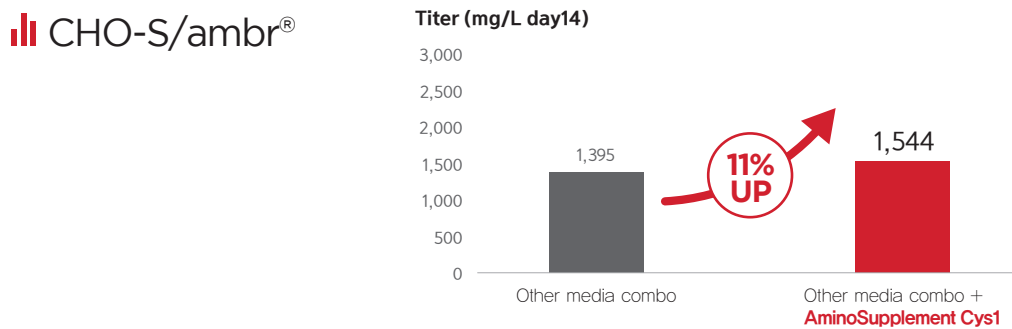
## Titer improvement

Adding AminoSupplement Cys1/2 increase Cysteine availability in the media by inhibiting Cystine formation. This leads to improvement in overall productivity, as can be seen below.

[AminoSupplement Cys1]

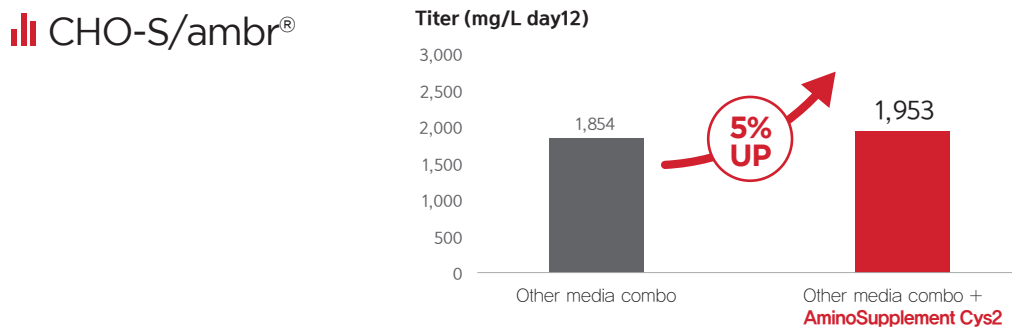


Fed-batch cultures were compared using cells of CHO-DG44. FEED2 was added 5.25% on days 4, 6, 8, 10, and 12 of culture.



Fed-batch cultures were compared using cells of CHO-S. Feed media from other companies was added 6% to the basic media from other companies on culture days 4, 6, 8, 10, and 12.

[AminoSupplement Cys2]

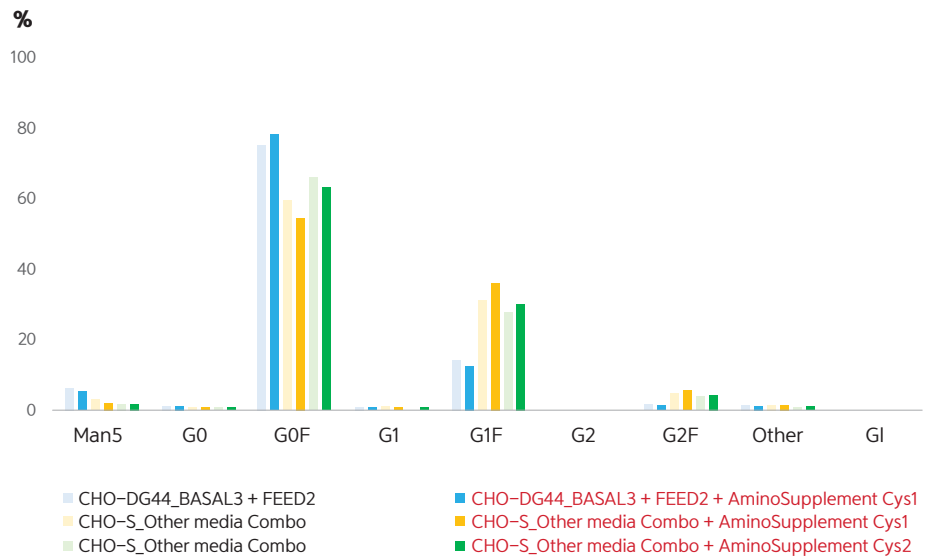


Fed-batch cultures were compared using cells of CHO-S. Feed media from other companies was added 4.5% to the basic media from other companies on cultures 4, 6, 8, 10, and 12 days.

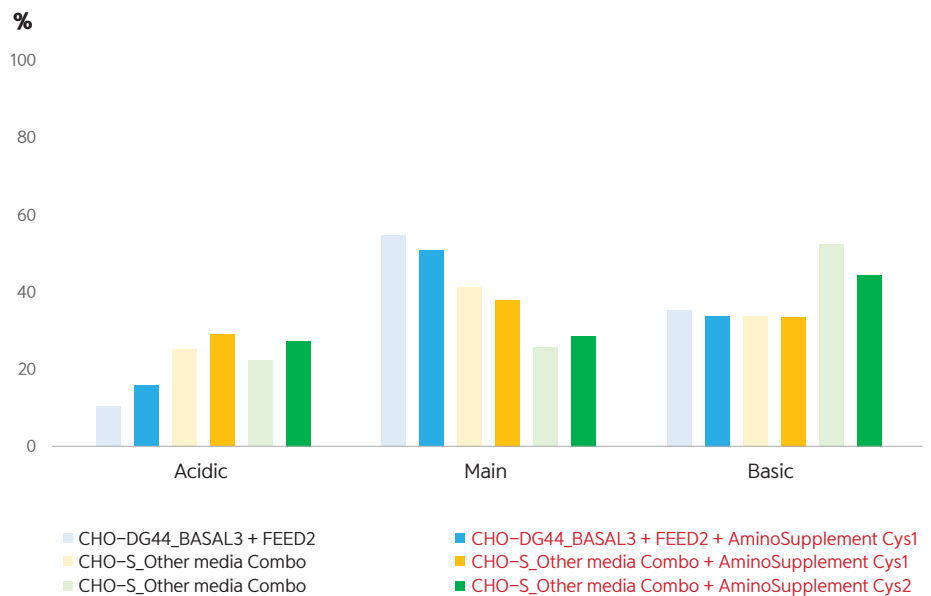
## Effect on the culture process

Adding AminoSupplement Cys1/Cys2 has **no major impact on glycan profile and Charge Variant** as follows, so you can use it without any significant change in the culture process.

### Glycan profile



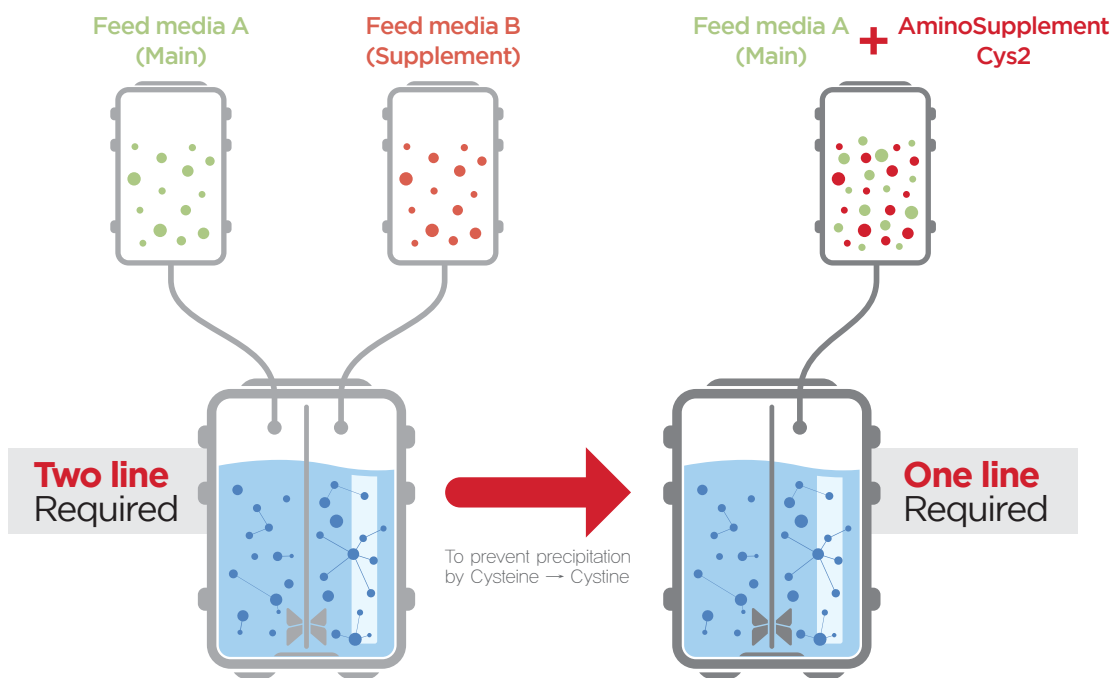
### Charge Variant



# CELLiST™ AminoSupplement Cys1/Cys2

## Costs-cutting by improved stability [AminoSupplement Cys2]

Two-agent feed media requires two tanks due to instability. However, adding AminoSupplement Cys2 improves the stability, which allows it to be prepared in a single tank and save much initial & running costs.



	day	0	10	14	17	21	24	28	31
Other feed media(feed A+B) w/o AminoSupplement Cys2	10 mL	+++	+++	+++	+++	+++	+++	+++	+++
	40 mL	+++	+++	+++	+++	+++	+++	+++	+++
Other feed media(feed A) w/ AminoSupplement Cys2	10 mL	—	—	—	—	—	—	—	+
	40 mL	—	—	—	—	—	—	—	—

—: No precipitation +: Slightly precipitated ++: Clearly precipitate +++: Large amounts of precipitates

# CELLiST™ AminoSupplement Cys1

Model	Package type	Qty.
CELLiST™ AminoSupplement Cys1	Aluminum Pouch Supplement for 1 L Feed media	6.61 g

## Properties

- ✓ Chemically defined feed media supplement.
- ✓ Does not contain animal-derived components.
- ✓ Does not contain hydrolysates, extracts or other undefined components.
- ✓ Does not contain protein-like growth factors.
- ✓ Does not contain L-glutamine sources, sodium bicarbonate, or poloxamer.

AminoSupplement Cys1 can be used with various feed media. Basically, hydrate the feed media with Cys1 by following the instructions of each feed media. In case of using CELLiST FEED2, please refer to the following instruction.

## Instructions for 1 L feed media preparation

- 1 Prepare appropriate container (beaker or flask) and stirrer. To ensure efficient stirring, a 2 L or 3 L container is recommended.
- 2 Add cell culture grade water (purified water) to the container up to 70% of total volume (700 mL).
- 3 Add the amount of powder feed medium required for preparation of 1,000 mL total feed medium. For example, in the case of CELLiST™ FEED2, add 110.0 g.
- 4 Add 6.61 g of CELLiST™ AminoSupplement Cys1 to the container.
- 5 Note: if a smaller amount of feed medium is prepared then please adjust Cys1 supplement amount accordingly.  
For example, if total of 200 mL feed medium is required, only 1.32 g of Cys1 supplement should be added to one pouch (22 g) of CELLiST™ FEED2.
- 6 Mix for at least 30 minutes using magnetic stirrer.
- 7 If necessary, add D-glucose source to the solution at a proper concentration (for example, 70 – 100 g/L).
- 8 Add 8 N NaOH to reach the desired pH. For CELLiST™ FEED2, approximately 10.1 mL of 8 N NaOH is required for pH 6.5 ~ 7.0.
- 9 Add cell culture grade water up to 950 mL.
- 10 Mix for at least 60 minutes until completely dissolved.
- 11 Confirm pH is 6.5 ~ 7.0. If the pH is less than 6.5, add an 8 N NaOH solution to adjust the pH to 6.5 ~ 7.0.  
If pH is 7.0 or higher, there is a possibility that it is not sufficiently dissolved, so please allow further stirring.
- 12 Add cell culture grade water to make up final volume (1,000 mL) and stir for about 15 minutes.
- 13 Sterile filter in a clean bench, using a membrane filter with pore size of 0.2 to 0.22 μm in diameter.
- 14 Keep the prepared medium refrigerated (2~8°C) until use. It is recommended to store the feed medium in sealed conical tubes or storage bottles leaving a minimum amount of free air space (in order to minimize oxidation of the medium).

## Storage

Store under cool (2~8°C), dark and dry conditions until use.

## Use

For laboratory and manufacturing use only. Not intended for human or therapeutic use.



## CELLiST™ AminoSupplement Cys2

Model	Package type	Qty.
CELLiST™ AminoSupplement Cys2	Aluminum Pouch Supplement for 1 L feed medium preparation	17.0 g

### Properties

- ✓ Chemically-Defined.
- ✓ Does not contain animal-derived components.
- ✓ Does not contain hydrolysates, extracts or other undefined components.
- ✓ Does not contain protein like growth factors.
- ✓ Does not contain L-glutamine sources, sodium bicarbonate, or poloxamer.

**Note:** Cys2 is meant to be used as a substitute for the second component (high pH component) in 2-component feed products

### Instructions for 1L feed media preparation

- 1 Prepare proper container (beaker or flask) and stirrer. To ensure efficient stirring, a 2 L or 3 L container is recommended.
- 2 Add cell culture grade water (purified water) to the container up to 800 mL.
- 3 Add the main feed medium component in the required amount needed for preparation of 1,000 mL feed.
- 4 Add 17.0 g of CELLiST™ AminoSupplement Cys2.
- 5 Mix for at least 30 minutes. (Note: It will not completely dissolve at this stage).
- 6 Slowly add 29.9 mL of 5 N NaOH in order to adjust the pH to the range of 6.6 ~ 6.8.
- 7 Mix for at least 60 minutes until completely dissolve.
- 8 Adjust the pH using either a 5 N or 10 N NaOH solution or HCl solution to the range of 6.6 ~ 6.8.
- 9 Mix for another 60 minutes.
- 10 Add cell culture grade water to make up final volume (1,000 mL) and stir for about 10 minutes.
- 11 Make sure the pH is in the correct range (6.6 ~ 6.8).
- 12 Sterile filter in a clean bench, using a membrane filter with pore size of 0.2 to 0.22  $\mu$ m in diameter.
- 13 Keep the prepared medium refrigerated (2~8°C) until use. It is recommended to store the feed medium in sealed conical tubes or storage bottles leaving a minimum amount of free air space (in order to minimize oxidation of the medium).

### Storage

Store under cool (2~8°C), dark and dry conditions until use.

### Use

For laboratory and manufacturing use only. Not intended for human or therapeutic use.



## CELLiST Global Customer Service Centers:



CELLiST | Solution Center  
Korea

70, Songdogwahak-ro, Yeonsu-gu, Incheon, Republic of Korea  
Tel: +82-32-210-2695 Fax: +82-32-210-2607

CELLiST | Solution Center  
India

Ahmedabad, India  
Mail: parshadg.hirapara.ut3@asv.ajinomoto.com

CELLiST | Solution Center  
China

Shanghai, China  
Mail: amino\_acid@ajinomoto.com.cn

Since 2015, CELLiST has been provided high quality cell culture media. Our mission is to contribute to the world's food and wellness, and to better lives for the future. Our vision is to become a genuine global food company group with specialties guided by our leading-edge bioscience and fine chemical technologies.

Eat Well, Live Well.

