Resurge™ CD Pak

Catalog Number 670030

Doc. Part No. GRA0011238 Pub. No. MAN0019109 Rev. B.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support**.

CAUTION! For use as a raw material in further manufacturing applications.

Product description

Gibco™ Resurge™ CD Pak contains individually packaged Resurge™ CD supplements. These supplements are chemically defined, animal origin-free and protein free. Resurge™ CD supplements are designed for use with mammalian cell cultures to enhance cell performance over base medium.

Contents and storage

Table 1 Resurge™ CD Pak, Cat. No. 670030

Contents	Amount	Storage
Resurge™ CD1 Supplement	100 g	2°C to 8°C. Store in a dry place. Protect from heat, sunlight, and wide temperature swings.
Resurge™ CD2 Supplement	100 g	
Resurge™ CD3 Supplement	100 g	
Resurge™ CD4 Supplement	100 g	
Resurge™ CD5 Supplement	100 g	

Procedural guidelines

- Resurge™ CD supplement powders and reconstituted stock solutions should be stored at 2–8°C and protected from light.
- Refer to the product label for the expiration date of each powder supplement when stored at 2–8°C.
- Stock solutions of Resurge™ CD supplements should be protected from light and used within 6 months of reconstitution or the expiration date of the original powder stock, whichever is earliest.
- Processes using Resurge™ CD supplements are scalable, and performance has been demonstrated in deep well plates, shake flasks, and bioreactors.
- Resurge™ CD supplements have been primary evaluated with CHO cell lines expressing monoclonal antibodies and recombinant proteins. These supplements should work with other cell types when evaluated using the same protocols.

Reconstitute supplements

Reconstitute Resurge™ CD supplements to 40 g/L

1. Weigh 40 g of Resurge™ CD supplement powder.
2. Fill a clean 1 L beaker with approximately 900 mL room temperature water for injection (WFI) or equivalent.
3. Add the powder to the beaker and mix for a minimum of 30 minutes.
4. Once completely dissolved, bring volume to 1 L with WFI or equivalent.
5. Filter sterilize the concentrated solution through a 0.2-µm filter membrane and use as needed.
6. Store solution at 2–8 °C and protect from light.

Reconstitute Resurge™ CD supplements to 100 g/L

1. Weigh 100 g of Resurge™ CD supplement powder.
2. Fill a clean 1 L beaker with approximately 700 mL room temperature water for injection (WFI) or equivalent.
3. Add the powder to the beaker and mix until all the powder is in suspension.
4. Adjust the pH to between pH 9.0 and pH 10.0 using 5N or 6N NaOH.
5. Mix for a minimum of 30 minutes.
6. Adjust pH to 8.0 ±0.2 or desired pH using 5N or 6N HCl.
7. Bring volume to 1 L with WFI or equivalent.
8. Mix for a minimum of 10 minutes.
9. Filter sterilize the concentrated solution through a 0.2-µm filter membrane and use as needed.
10. Store solution at 2–8 °C and protect from light.

Test Resurge™ CD supplements

When first using Resurge™ CD supplements, it is recommended that all 5 supplements be concurrently evaluated to determine the supplement(s) that are most optimal to the cell culture system.

Batch culture process

- For a batch culture process, an initial titration when using each Resurge™ CD supplement is recommended.
- Glucose and glutamine levels should be maintained as per cell line requirements.

Day of culture	Final Resurge™ CD supplement concentration[1]
Day 0 or day 2	1.0 g
	3.0 g
	6.0 g

[1] In the cell culture vessel

Fed batch culture process

- The culture should be started at a reduced volume to accommodate the anticipated feeding volume.
- Glucose and glutamine levels should be maintained as per cell line requirements.

Day of culture	Final Resurge™ CD supplement concentration[1]
Day 0 or day 2 to mid-growth phase	2.0–6.0 g/L

[1] In the cell culture vessel

Troubleshooting

Observation	Possible cause	Recommended action
Resurge™ CD supplements are either not dissolving or taking an excessively long time to completely dissolve	Low vortex due to slow mix speed or wrong reconstitution vessel	Use beaker to reconstitute small amounts of Resurge™ CD supplements
		Increase mixing speed to maximize vortex
	Temperature of water or room is unusually low	Reconstitute with room temperature (~ 25°C) water in an environment controlled at ~ 25°C
Medium is cloudy or a precipitate is observed following addition of Resurge™ CD supplements	Possible reaction between components resulting in precipitation. Concentration of some components above solubility limits.	Perform compatibility test to identify correct concentration of Resurge™ CD supplement to use
		Contact technical support
	Possible contamination	Identify contaminant and root cause of contamination
		Remake solution and retest using aseptic procedures
Inadequate cell culture performance	High/low levels of Resurge™ CD supplements.	Perform titration of Resurge™ CD supplement to determine concentration range for optimal performance
	High osmolality when Resurge™ CD supplements are added to basal medium	Perform compatibility test to identify the optimum concentration of Resurge™ CD supplements to use for your application
		Reduce other supplementation levels
	Over supplementation if using other feed additives (amino acids, hydrolysates, etc.) together with Resurge™ CD supplements	Try alternate feeding plan with reduced amount of other feeds (amino acids, hydrolysates, etc.)
	Resurge™ CD supplement not added at day 0 of culture	Add Resurge™ CD supplement on day 0 of culture. In some instances, this process change has improved performance

Related products

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

Item	Cat. No.	Amount
Resurge™ CD1 Supplement	670011	100 g
	670012	1 kg
	670013	5 kg
Resurge™ CD2 Supplement	670015	100 g
	670016	1 kg
	670017	5 kg
Resurge™ CD3 Supplement	670018	100 g
	670019	1 kg
	670020	5 kg
Resurge™ CD4 Supplement	670021	100 g
	670022	1 kg
	670023	5 kg
Resurge™ CD5 Supplement	670024	100 g
	670025	1 kg
	670026	5 kg
Glucose, powder	15023021	1 kg
Glucose Solution	A2494001	50 mL
L-Glutamine	21051024	100 g
Pluronic™ F-68 (Kolliphor™ P 188)	24040032	100 mL
M9 Minimal Salts (2x)	A1374401	1 L
Cell line specific supplements as required	MLS	—

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at **www.thermofisher.com/us/en/home/global/terms-and-conditions.html**. If you have any questions, please contact Life Technologies at **www.thermofisher.com/support**.

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For descriptions of symbols on product labels or product documents, go to **thermofisher.com/symbols-definition**.