Nanobacteria Removal Reagent (1000X)

Cat. No.	CC1053-001	CC1053-010	CC1053-100
Size	1 mL	10x1 mL	100 mL
Appearance	Light yellow liquid		
Shelf Life	-20°C for protected from light for 18 months; 2-8°C for 2 weeks		

Description:

Nanobacteria also known as calcified nanobacteria, is a widespread cellular contaminant that coexists with cells and is passed down through generations. It is typically resistant to various antibiotics, rendering antibiotic treatments ineffective. This contaminant competes with cells for growth, negatively impacting normal cell growth and potentially leading to cell death in severe cases. Many cell cultures are currently contaminated with "Nanobacteria" significantly affecting cell culture and subsequent experiments.

Cells contaminated with "Nanobacteria" typically exhibit the following characteristics:

(1) The culture medium is not turbid, but under a microscope, many small black dots can be observed around the cells and in the culture fluid. These dots increase over time, and changing the medium or washing the cells is ineffective.

(2) Common antibiotics added to the culture medium, such as penicillin, streptomycin, and gentamicin, are ineffective against it.

(3) It may be transmitted through the air in the incubator.

(4) Nanobacteria competes with cells for growth, causing slow cell growth, poor cell condition, severe vacuolation, and even changes in cell morphology.

ACE Biolabs Nanobacteria Removal Reagent (1000×) is the latest generation product developed by our company, containing antimicrobial small molecule MRAs peptides specifically targeting Nanobacteria. After testing and long-term experimental validation on hundreds of cell types, this product has been proven harmless to cells, ensuring normal cell culture activity and smooth experimental progress. It effectively inhibits and eliminates Nanobacteria.

Nanobacteria Removal Reagent (1000×) can eliminate most types of black rubber worm without being toxic to the cells themselves. It has been validated on hundreds of cell types, including ***human embryonic stem cells and iPS cells, mouse embryonic stem cells and iPS cells, HEK293, Hela, HepG2, HCT116, COS-7, Vero, Huh-7, MDCK, PANC-1, SW620, U2OS, MCF-7, MRC-5, NIH-3T3, CCC-ESF, CHO-S, CHO-K1, CHO-DG44, A375, H295R, HL60, K562, MDA-MB-231, SP20, T47D, BM, and BV2, among others.***

Important Information

- This product may occasionally precipitate and can be used after shaking well. (If crystals or precipitates are found after thawing, it does not affect the efficacy and can be dissolved by shaking.)
- As this product is not a broad-spectrum antibiotic, it is recommended to use it in combination with Penicillin-Streptomycin Solution (100X) (Cat No.: CC1009) for better results.
- If not used immediately, store the product at -5~-20°C protected from light to avoid repeated freeze-thaw cycles; after thawing, store at 2-8°C protected from light and use within 4 weeks for best results.
- This product is sterilized by 0.22μm filtration. Ensure aseptic operations during use to avoid contamination.
- As environmental contamination sources may still exist, to prevent recontamination of cells, it is recommended to continue using a complete medium containing black rubber worm removal reagent for 1-2 weeks to achieve a preventive effect.
- This product is for research or further manufacturing use only and should not be used for pharmaceutical, clinical, food, or cosmetic purposes.
- Please read the product manual carefully to understand related information, such as usage, storage, and shelf life, to ensure operations are consistent with the manual.

Preparation

1. Prepare a complete medium with the nanobacteria removal reagent according to the characteristics of the cultured cells. It is recommended to prepare and use immediately.

2. The recommended dilution ratio is 1:1000. For example, add 50μL of the nanobacteria removal reagent to 50mL of complete medium and mix well.

3. Discard the old medium, wash the cells thoroughly with PBS, and then add fresh medium containing the "black rubber worm" removal reagent. Change the medium every 2 days and treat for 2-3 cycles continuously.

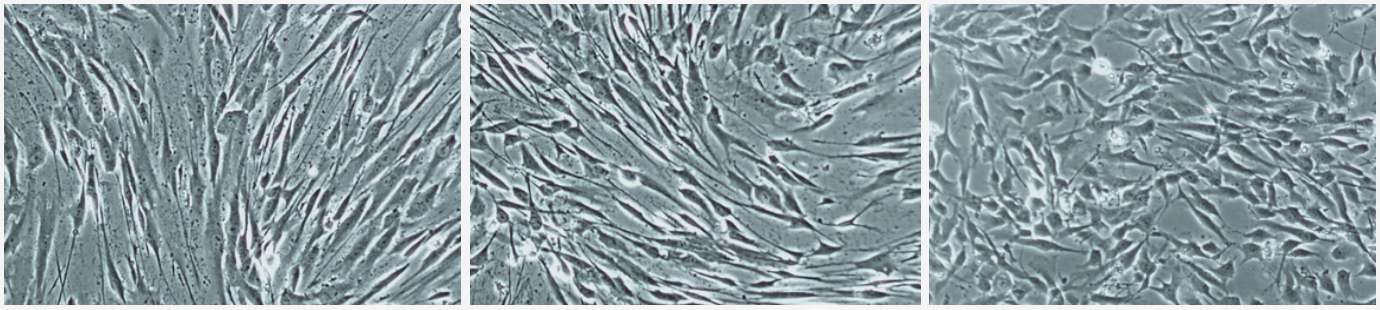
4. Significant removal effects can be observed after using the nanobacteria removal medium for 1 day. Generally, continue treatment for 3-5 days, then passage the cells and treat for another 3-5 days to completely remove the "black rubber worm." If contamination is severe, extend the treatment for an additional 3-5 days.

5. Since environmental contamination sources may still exist, to prevent cells from being re-contaminated by the nanobacteria, it is recommended to continue using the nanobacteria inhibitory medium after removal to achieve a preventive effect. (The recommended inhibitory concentration ratio is 1:2000, adding 250μL to 500mL of medium.)

6. If cells are sensitive to the "black rubber worm" removal reagent or their growth is significantly inhibited, please refer to the recommended parameters below for cell treatment:

	Most cells	Sensitive cells	Extremely sensitive cells
Dilution ratio	1:1000	1:2000	1:3000
Treatment duration	3-5 days	7 days	10 days

Example of Elimination Effects



Day 1 **Day 3** **Day 5**

Treatment for pericyte

Frequently Asked Questions

Q: What are the main components of the nanobacteria removal agent? Will using this reagent affect transfection experiments conducted simultaneously? Will it affect subsequent protein, DNA, or RNA extraction?

A: It is an antibacterial small molecule MRAs peptide that is harmless to cells. However, for transfection experiments, it is important for cells to be in good condition. It is recommended not to add the removal reagent before starting the experiment.

Q: When using the nanobacteria removal reagent, is it necessary to change the medium daily, or should it follow the normal subculture medium replacement procedure?

A: Yes, it is necessary to change the medium daily. During replacement, wash the cells twice with PBS, then add complete medium containing the removal reagent. When the cells reach confluence, normal subculture can proceed.

Q: After adding the nanobacteria removal reagent to the medium, can it be stored for one to two weeks before use? Will it lose efficacy?

A: Yes, the prepared medium can be used within 4 weeks without any issues.