Nanobacterial Contamination

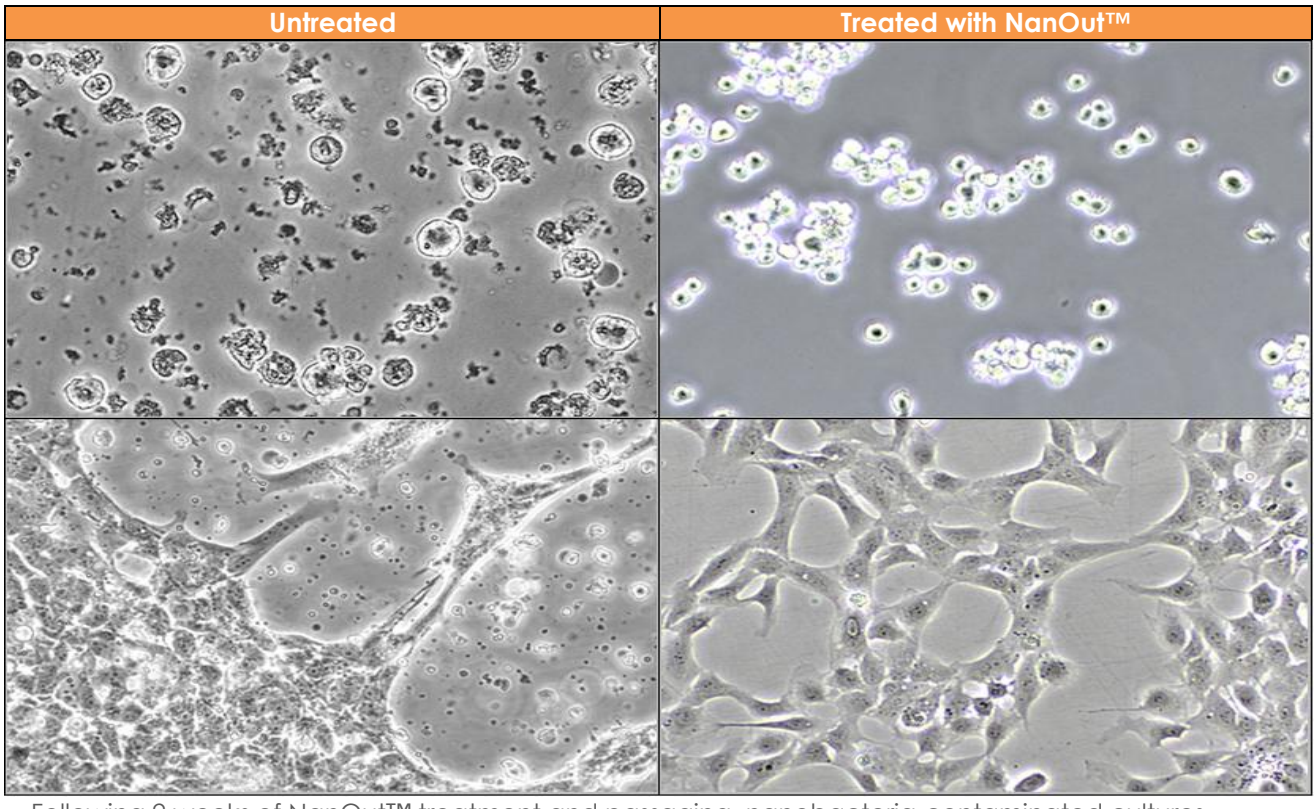
Nanobacterial Contamination: A Hidden Threat in Cell Culture

Nanobacterial contamination is an emerging concern in cell culture due to its potential to alter cell behavior, interfere with experimental outcomes, and remain undetected by standard methods.

Why Nanobacterial Contamination Control Is Critical:

- **Difficult to Detect:** Nanobacteria are extremely small and often evade detection by standard assays or microscopic observation, allowing contamination to persist unnoticed for extended periods.
- **Impact on Cell Growth:** Nanobacteria can disrupt or inhibit normal cell proliferation, leading to inconsistent and unreliable culture performance.
- **Changes in Cell Physiology:** Contaminated cells may display altered morphology, gene expression, or metabolic activity, skewing downstream data and interpretations. Even low-level contamination can accumulate over time, gradually degrading culture quality and reproducibility without obvious early warning signs.
- **Widespread but Underrecognized:** Nanobacteria are far more prevalent than most cell biologists realize—likely present in nearly every routine culture—and are gaining attention within the scientific community. Some cell types are particularly susceptible, exhibiting morphological and physiological changes under stress conditions such as freezing, thawing, or co-contamination with mycoplasma.

abm is leading the field in nanobacterial contamination control. Our trusted expertise and NanOut™ Antibiotics will safeguard valuable cultures and prevent irreversible loss of irreplaceable cell lines.



Following 2 weeks of NanOut™ treatment and passaging, nanobacteria-contaminated cultures displayed improved growth and restored cell morphology compared to untreated cultures.

Application	Product	Cat.No.	Mycoplasma	Bacteria	Yeast	Fungi	Quantity
Prevention	NanOut™	G7002	✔	✔	✔	✔	1 x 1 ml (for 2 L culture)
Elimination	NanOut™	G7002	✔	✔	✔	✔	1 x 1 ml (for 1 L culture)

abm's antimicrobial agents can be used as a prophylactic and elimination treatment against contamination.