

Plasmocure™

For the elimination of mycoplasma contamination in cell cultures

Catalog code: ant-pc

<http://www.invivogen.com/plasmocure>

For research use only. Not for human or veterinary use.

Version 21F07-NJ

PRODUCT INFORMATION

Content

Plasmocure™ is supplied as a cell culture tested, sterile filtered solution at 100 µg/ml.

- **ant-pc:** 1 ml (100 mg)

One 1 ml vial is sufficient to treat 1 to 3.3 liters of culture.

Shipping and Storage

- Plasmocure™ is shipped at room temperature. Upon receipt it should be stored at 4 °C for 12 months or at -20 °C for long-term storage. Avoid repeated freeze-thaw cycles.

- The expiry date is specified on the product label.

Note: Product is stable for 2 weeks at room temperature.

QUALITY CONTROL

Each lot is thoroughly tested to ensure the absence of lot-to-lot variation:

- Endotoxin level: < 0.5 EU/mg
- Physicochemical characterization (pH, appearance)
- Cell culture tested: potency validated on bacterial reference strains

BACKGROUND

Mycoplasma contamination is a significant problem for mammalian cell culture. Reports estimate mycoplasma contamination in up to 35% of all cell cultures^{1,2}. Unlike bacterial or fungal contaminations, mycoplasma cannot be detected by visual inspection and may not noticeably affect cell culture growth rates. However, mycoplasma infection has been shown to alter DNA, RNA and protein synthesis, introduce chromosomal aberrations and cause alterations or modifications of host cell plasma membrane antigens.

DESCRIPTION

Plasmocure™ is a highly effective antibiotic solution for the treatment of mycoplasma contaminated cell cultures. This solution is active against various *Mycoplasma* species that infect mammalian cell cultures including *M. hyorhinis*, *M. orale*, *M. arginini*, *M. fermentans*, *M. hominis* and *Acholeplasma laidlawii* that represent 90-95% of the contaminating strains. Plasmocure™ is recommended for the elimination of mycoplasmas that appear to be resistant to Plasmocin™, a wide spectrum and potent anti-mycoplasma agent. In the rare cases where Plasmocin™-resistant mycoplasmas have been encountered, Plasmocure™ can eliminate them because its mechanism of action is different from Plasmocin™³.

The cytotoxicity of Plasmocure™ is low³, however a slowdown of cell growth may be observed. At the end of the treatment, when Plasmocure™ is removed from the culture medium, the cells return rapidly to their normal growth rate.

COMPOSITION

Plasmocure™ contains two bactericidal components belonging to different antibiotic families. They both act by inhibiting the protein synthesis but use distinct mechanisms. The first antibiotic binds to the 50S subunit of the ribosome and blocks peptidyltransferase activity. The second antibiotic binds to isoleucyl-tRNA synthetase and halts the incorporation of isoleucine into bacterial proteins. These specific targets are absent in eukaryotic cells, ensuring low cytotoxicity.

METHOD

The working concentration of Plasmocure™ varies from 30 to 100 µg/ml. It can be added directly to the bottle of culture medium or to the flask containing the cells. To determine the optimal concentration for your cells, we recommend to test in parallel 3 different concentrations (see table below).

Plasmocure™ final concentration	T25 with 5 ml medium	T75 with 15 ml medium	500 ml bottle
30 µg/ml	1.5 µl	4.5 µl	150 µl
50 µg/ml	2.5 µl	7.5 µl	250 µl
100 µg/ml	5 µl	15 µl	500 µl

Note: Make sure to maintain a non-treated culture and/or frozen vial as control of treatment efficacy and back-up cells in case of cell deterioration.

1. Remove medium from contaminated cells and rinse twice with phosphate buffered saline (PBS).
2. Split an actively dividing culture of cells into medium containing Plasmocure™. Ensure your cells are in the exponential growth phase by passing them at an appropriate dilution (e.g. 1:10).
3. Passage cells and/or replace medium with fresh Plasmocure™ containing medium every 3-4 days for 2 weeks.
4. Confirm the elimination of mycoplasmas by using a mycoplasma detection kit such as **PlasmoTest™**, a cell-based colorimetric assay, or **MycStrip™**, a genomic detection assay on strips.

Note: If mycoplasma elimination is not completed after a 2-week treatment, see the troubleshooting section on the next page.

5. To prevent any further contamination, we recommend using **Normocin™** which is also active against bacteria and fungi.

TECHNICAL SUPPORT

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TROUBLESHOOTING

- Following 2-week treatment with Plasmocure™, mycoplasmas should be eliminated. If mycoplasma contamination is reduced but still present, you can treat the cells with Plasmocure™ for a further week.

- If there is no reduction in the mycoplasma contamination following treatment with Plasmocure™, the mycoplasma infecting your cells may be resistant to this treatment. In this instance, we recommend using [Plasmocin™ Treatment](#), as an alternative mycoplasma removal agent. [Plasmocin™ Treatment](#) combines two antibiotics that act through different mechanisms of action than those in Plasmocure™.

A 2-week treatment with [Plasmocin™ Treatment](#) is typically sufficient to completely eliminate mycoplasmas. Moderate toxicity can be observed during the course of the treatment but full recovery of the cell line is expected once mycoplasmas are eliminated.

REFERENCES

1. Lincoln CK. & Gabridge MG., 1998. Cell culture contamination: sources, consequences, prevention, and elimination. *Methods Cell Biol.* 57:49-65.
2. Uphoff CC. & Drexler HG., 2002. Comparative PCR analysis for detection of mycoplasma infections in continuous cell lines. *In Vitro Cell Dev Biol Anim.* 38:79-85.
3. Molla Kazemiha V. *et al.*, 2019. Effectiveness of Plasmocure in elimination of mycoplasma species from contaminated cell cultures: a comparative study versus other antibiotics. *Cell. J.* 21(2):143-149.

RELATED PRODUCTS

Product	Description	Cat. Code
MycStrip™	Mycoplasma detection kit	rep-mys-10
Normocin™	Antimicrobial agent	ant-nr-1
Plasmocin™ Treatment	Anti-mycoplasmal agent	ant-mpt-1
PlasmoTest™	Mycoplasma detection kit	rep-pt1
Primocin™	Antimicrobial agent	ant-pm-1

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