

# Normocure™

Broad-spectrum antibacterial reagent for the treatment of contaminated cell cultures

Catalog code: ant-noc

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

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

Version 18C26-MM

## PRODUCT INFORMATION

### Content

Normocure™ is supplied as a cell culture tested, sterile filtered red solution at 50 mg/ml.

- **ant-noc:** 2 x 1 ml (100 mg)

One 1 ml vial is sufficient for 500 ml of culture.

### Shipping and Storage

- Normocure™ is shipped at room temperature. Upon receipt it can be stored at 4°C for 3 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 and fungal reference strains

## BACKGROUND

Although microbial contamination of cell cultures has been known for more than 50 years, it is still a widespread cause for erroneous research results, for reduced reproducibility and even for unusable therapeutic products. Bacteria are found virtually everywhere, in the air, the soil, and water, and in and on plants and animals, including man. These organisms can usually be readily detected in a cell culture within a few days of becoming contaminated; either by direct microscopic observation or by the effects they have on the culture (pH shifts, turbidity, and cell destruction).

There are two major sources of bacterial contaminants: the animate environment, e.g. man, represented by *Staphylococcus* species, and the inanimate environment, represented by saprophytic and particularly water borne organisms, such as *Pseudomonas* species and *Flavobacterium* species<sup>1</sup>. These bacterial species, as well as *Achromobacter* sp., *Alcaligenes* sp. and *Bordetella* sp., are nonfermenting Gram-negative bacilli, a heterogeneous group of environmental opportunistic bacteria that are multidrug resistant and thus are very difficult to eliminate<sup>2</sup>.

1. Jorgen Fogh, 1973. Contamination in Tissue Culture, published by Academic Press Inc. 2. McGowan JE., 2006. Resistance in nonfermenting gram-negative bacteria: multidrug resistance to the maximum. Am J Med. 119(6 Suppl 1):S29-36; discussion S62-70. 3. Mirjalili A, et al., 2005. Microbial contamination of cell cultures: a 2 years study. Biologicals. 33(2):81-85. 4. Gray JS, et al., 2010. Got black swimming dots in your cell culture? Identification of *Achromobacter* as a novel cell culture contaminant. Biologicals. 38(2):273-7.

## DESCRIPTION

Normocure™ is a broad-spectrum antibacterial agent highly effective against Gram-positive and Gram-negative bacteria. Cell cultures contaminated with bacteria from the environment, such as *Staphylococcus* species<sup>3</sup> and *Achromobacter* species<sup>4</sup>, can be efficiently cured by Normocure™ treatment. Unlike most antibiotics used to treat cell cultures, such as Penicillin-Streptomycin (Pen-Strep), Normocure™ is also active against most multidrug resistant bacteria.

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

## COMPOSITION

Normocure™ contains three bactericidal components belonging to different antibiotic families. They inhibit DNA and protein synthesis and disrupt membrane integrity, by acting against different targets that are absent in eukaryotic cells.

## METHOD

Normocure™ is used at a working concentration of 100 µg/ml. It can be added directly to the bottle of culture medium or to the flask containing the cells. Refer to the table below to determine the volume needed.

Reagent	T25 with 5 ml medium	T75 with 15 ml medium	500 ml bottle
Normocure™	10 µl	30 µl	1 ml

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 100 µg/ml of Normocure™. Ensure your cells are in the exponential growth phase by passing them at an appropriate dilution (e.g. 1:10).
3. Repeat steps 1 to 3 every 3-4 days twice. The decontamination period is 2 weeks (3 passages).

## RELATED PRODUCTS

Product	Description	Cat. Code
Fungin™	Antifungal agent	ant-fn-1
Normocin™	Antimicrobial agent	ant-nr-1
Plasmocin™ Prophylactic	Anti-mycoplasma agent	ant-mpp
PlasmoTest™	Mycoplasma detection kit	rep-pt1

## TECHNICAL SUPPORT

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