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# Product Information

**Chloramphenicol Extraction Kit**

Catalog Number **MAK227**
Store at Room Temperature

## TECHNICAL BULLETIN

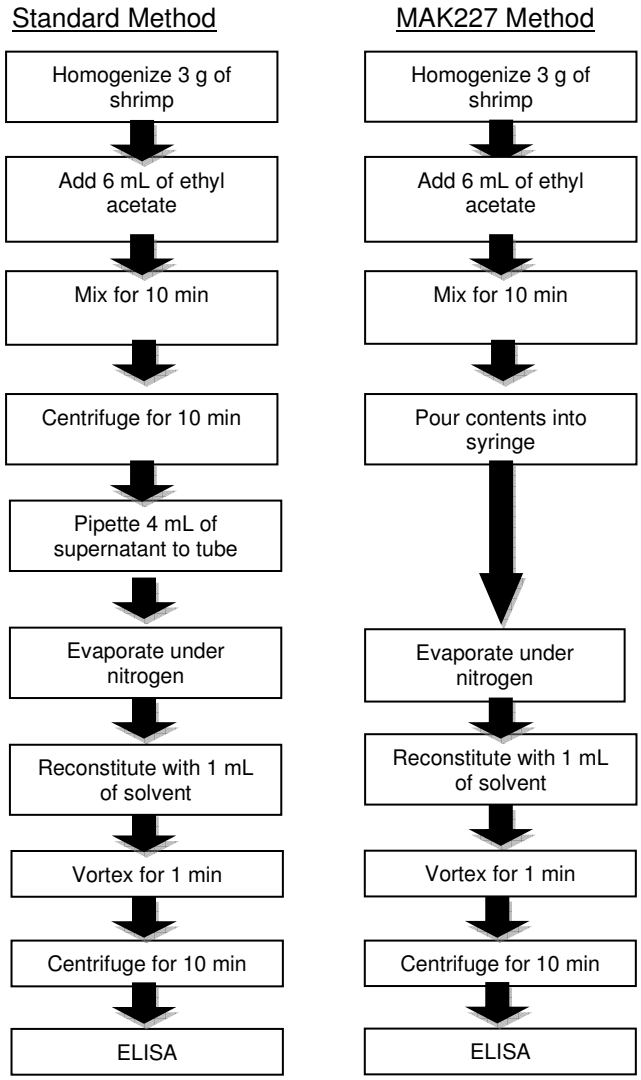
**Product Description**
The Chloramphenicol Extraction Kit is intended for the extraction of chloramphenicol from food and biological samples. It can be used for any biological food sample - shrimp, meat, liver, crab, fish, etc.

Chloramphenicol, or chlornitromycin, is a broad-spectrum antibiotic that is used to treat a wide variety of bacterial infections. However, due to potential serious side effects its use has been banned in many countries. Minimum acceptable limits have been set for chloramphenicol residues in food samples. This Chloramphenicol Extraction Kit enables the separation of chloramphenicol from tissue and aqueous tissue components. The extracted chloramphenicol can then be detected and quantified by enzyme-linked immunosorbent assay (ELISA) followed by spectrophotometric analysis. A flowchart comparing the standard extraction procedure to the new extraction method is shown in Figure 1.

In the standard extraction, chloramphenicol is typically extracted using ethyl acetate. In this procedure, ethyl acetate containing the chloramphenicol is separated from tissue by centrifugation for 10 minutes followed by manual pipetting. An aliquot is then dried and reconstituted into 1 mL each of iso-octane:chloroform (2:3) solution and sample dilution buffer, of which 50 µL of sample dilution buffer is used for analysis by ELISA and spectrophotometry.

The Chloramphenicol Extraction Kit shortens the extraction process by eliminating the need for centrifugation and manual pipetting. Ethyl acetate is added to the sample. The sample is then vortexed and poured into the syringe containing a filter, which elutes the ethyl acetate layer containing chloramphenicol while trapping tissue and aqueous tissue components in the filter. The syringe plunger is then squeezed to make sure that the chloramphenicol and solvent are eluted. After that, the entire 4 mL chloramphenicol extract can be used to detect chloramphenicol by ELISA and spectrophotometric analysis as described in Procedure, step 11.

Figure 1: Standard Chloramphenicol Extraction and MAK227 Chloramphenicol Extraction method comparison



**Components**
The kit is sufficient for 40 Assays.

| | |
|---|---|
| Extraction solvent<br>Catalog Number MAK227A | 2 × 122 mL |
| Reconstitution solvent<br>Catalog Number MAK227B | 42 mL |
| Plunger Syringe w/ Filter<br>Catalog Number MAK227C | 40 ea |

**Reagents and Equipment Required but Not Provided.**

- Homogenizer to homogenize solid samples.
- Pyrex® glass tubes to collect the chloramphenicol extract.
- Spectrophotometric multiwell plate reader, capable of detection at 450 nm.
- Europroxima Chloramphenicol ELISA kit (Catalog No. 5091CAP) or a similar kit.

**Precautions and Disclaimer**
For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

**Storage/Stability**
Store the kit at room temperature.

**Procedure**
Read entire protocol before performing the assay.

This kit enables the extraction of chloramphenicol for quantitation by an appropriate ELISA kit.

1. Homogenize approximately 10 g of tissue.
2. Weigh 3 g of the sample.
3. Add 6 mL of Extraction solvent (ethyl acetate) to each sample.
4. Mix by inversion for 10 minutes.
5. Pour the solution into the syringe containing the filter.
   Note: The syringe should be placed on top of a collecting tube (e.g., Pyrex glass tube) that can hold at least 4 mL of solvent.
6. Push the plunger to elute solvent into the collecting tube. The eluted solvent contains chloramphenicol in ethyl acetate.
7. Evaporate the ethyl acetate under a stream of nitrogen.
8. Dissolve the remaining residue in 1 mL of Reconstitution solvent.
9. Add 1 mL of sample dilution buffer.
   Note: The sample dilution buffer comes as part of the Europroxima Chloramphenicol ELISA kit (Catalog No. 5091CAP). Vortex the mixture for 1 minute and centrifuge for 10 minutes at 2,000 × *g*.
10. Pipette 50 µL portions of the upper layer into individual wells of the ELISA kit.
    Note: In the case of an emulsified upper layer, heat the test tube in a water bath at 80 °C for 5 minutes and centrifuge for 10 minutes at 2,000 × *g*.
11. The chloramphenicol extract may now be analyzed by ELISA as described in the Europroxima Chloramphenicol kit (Catalog No. 5091CAP).
12. The syringe, filter, and plunger must be disposed in appropriate chemical waste containers after use. They cannot be used more than once.

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