



GB/T 4789.27-2008

Microbiological Examination of Food Hygiene - Examination of Residue of Antibiotics in Fresh Milk

食品卫生微生物学检验

鲜乳中抗生素残留检验

Ministry of Health,
Standardization Administration
of the People's Republic of China

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National Standard of the People's Republic of China

GB/T 4789.27-2008

In Replacement of GB/T 4789.27-2003

Microbiological Examination of Food Hygiene – Examination of Residue of Antibiotics in Fresh Milk

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Foreword

This standard is modified in relation to “AOAC Official Method 982. 18: Beta-lactam antibiotics in fluid milk products – Qualitative color reaction tests” for use as Method II.

Compared with AOAC 982.18, the main differences of this standard are as follows:

——the scope of application has been enlarged to “applies to the examination of antibiotics which can inhibit *Bacillus stearothermophilus* var. *calidolactis* in fresh milk, this method also can apply to examine the antibiotics in reconstituted milk, pasteurized sterilized milk, or milk powder”;

——the method of adding nutrition tablets to the kit has been modified to prepare the culture medium containing the test strain spores directly in small test tube.

——the procedure ‘Note: Occasionally kits of a particular Lot No. may require a longer incubation time for color to fully develop. If.....Check color development at 10min intervals and record optimum incubation time required for each Lot No.’ has been modified to ‘If no change on color, incubate again for 30 min in water bath for final observation.’

——the confirmation procedure for penicillinase has been deleted.

This standard replaces GB/T 4789.27-2003 ‘Microbiological examination food hygiene – Examination of residue of antibiotics in fresh milk’.

Compared with GB/T 4789.27-2003, the major changes made to this standard are as follows:

——the Chinese expression of the standard name has been modified and standardized;

——Method II has been added and the inhibitory method by *Streptococcus thermophilus* in the original standard has been determined as Method I;

——Annex A ‘Medium and Reagents’ has been added.

Annex A in this standard is a normative Annex.

This standard was proposed by and is under the jurisdiction of Ministry of Health of the People’s Republic of China.

This national standard is subject to the interpretation made by the Ministry of Health of the People's Republic of China.

The organization which is responsible for drafting this standard: Fujian Provincial Center for Disease Control and Prevention.

The organizations participating in the drafting of this standard are as follows: National Institute for Nutrition and Food Safety, Chinese Center for Disease Control and Prevention, Chinese Academy of Inspection and Quarantine, Henan Provincial Center for Disease Control and Prevention and Hubei Provincial Center for Disease Control and Prevention.

The main drafters of this standard are as follows: Ma Qunfei, Guo Yunchang, Li Jin, Tian Wei, Liao Xingguang, Ma Yi and Tian Jing.

This standard replaces all previous standards, those issued editions are:

——GB 4789.27-1984, GB/T 4789.27-1994, GB/T 4789.27-2003.

Microbiological Examination of Food Hygiene– Examination of Residue of Antibiotics in Fresh Milk

1 Scope

This standard specifies the method for examination of residue of antibiotics in fresh milk.

Method I in this standard applies to the examination of the antibiotics which can inhibit *Streptococcus thermophilus* in fresh milk; Method II applies to the examination of antibiotics which can inhibit *Bacillus stearothermophilus* var. *calidolactis* in fresh milk, this method also can apply to examine the antibiotics in reconstituted milk, sterilized milk, or milk powder.

Method I: Inhibitory Method by *Streptococcus Thermophilus*

2 Principle

Streptococcus thermophilus should be added in the sample after the sample is sterilized at 80°C. *Streptococcus thermophilus* grows during the incubation for a certain period. Add the metabolizing substrate 2,3,5-triphenyltetrazolium chloride (TTC) at this time, the *Streptococcus thermophilus* will still be growing if no antibiotics are contained in the sample or the antibiotics contained therein are below the detection limit. TTC will be reduced to a red substance. On the contrary, if the antibiotics contained in the sample are beyond the detection limit, the bacteria will be inhibited. Thus, indicator TTC will not be reduced, with no color change.

3 Apparatus and Materials

In addition to the conventional apparatus for sterilization and incubation in microbiological laboratory, other apparatus and materials are as follows:

3.1 Refrigerators: controlled at 2°C~5°C, -20°C~-5°C.

3.2 Constant temperature incubators: controlled at 36°C ± 1°C.

3.3 Constant temperature water bathes with lids: controlled at 36°C ± 1°C, 80°C ± 2°C.

3.4. Balance, sensitivity 0.1 g, 0.001 g.

3.5. Sterile pipettes, with nominal capacities of 1 mL (with 0.01-mL marking), 10.0 mL (with 0.1-mL marking) or microsyringe and tips.

3.6. Sterile tubes: 18 mm × 180 mm.

3.7. Thermometer: 0°C~100°C.

3.8. Vortex mixer.

4 Culture, Medium and Reagents

4.1 Culture: *Streptococcus thermophilus*.

4.2 Sterilized skimmed milk: see Chapter A.1

4.3 4% 2,3,5-triphenyltetrazolium chloride (TTC) solution: see Chapter A.2.

4.4 Penicillin G reference solution: see Chapter A.3.

5 Examination Procedures



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