# Bacteria Colony Detection Plate (24)

*Cat. No.* *FSD-110*

*Lot. No.* (See product label)

## Product Name

Bacteria Colony Detection Plate (24)

## Product Overview

Bacteria Colony Detection Plate (24) is designed for the detection of total bacterial number in food and food materials, as well as on the surface of utensils and instruments.

## Description

This Bacteria Colony Detection Plate (24) is suitable for rapid detection of total bacterial number in all kinds of food and food materials; also it is used for detecting total bacterial number on the surface of utensils and instruments. Bacteria colony shows red spot on the detection plate. Select the count plates of which the colony quantity is between 30 CFU and 300 CFU to do the counting.

## Notes

Dispose the used count plates according to biology safety waste treatment rule, because there are live bacteria on them.

## Scientific Background

Bacteria colony, which is commonly used as testing indicator of microorganism test item, can determine the total bacterial number in unit area through certain culture condition. Bacteria colony count plate contains nutrient medium, soluble water-absorbent gel, and dehydrogenase indicator Triphenyltetrazolium chloride (TCC). Bacteria colony will show red on it.

## Detection method

Rapid Detection

## Features & Benefits

The coincidence rate of detecting result achieved by using bacteria colony count plate and by traditional plate counting method is higher than 80 %.

## Preparation

Sample preparation:
Prepare the 1:10 solution by placing 25 mL (g) of sample into 225 mL of sterile saline, then prepare 1:100 solution by sucking 1 mL of solution (1:10) with sterile pipette into 9 mL sterile saline. Prepare tenfold increasing serial dilution of sample. If necessary, use 1 mol/L NaOH or 1 mol/L HCL to adjust the PH value to 6.6-7.2.

Prepare and sterilize phosphate buffer:
Stock solution: weigh 34.0 g monopotassium phosphate ($KH_2PO_4$), and dissolve it in 500 mL of pure water or distilled water, and then use about 175 mL of 1 mol/L sodium hydroxide (NaOH) to adjust the PH value to 7.2. Dilute it to 1000 mL with distilled water and then store it in the refrigerator.
Diluent: Suck 1.25 mL of stock solution and dilute it to 1000 mL with distilled water. Subpackage them by suitable container. Autoclave them at 121 ℃ for 15mins or put them in the disinfection cabinet.

Prepare and sterilize normal saline:
Weigh 8.5 g sodium chloride (NaCl) and dissolve it by 1000 mL of distilled water or pure water. Subpackage it by suitable container. Autoclave them at 121 ℃ for 15mins or put them in the disinfection cabinet.

## Assay Protocol

Inoculation:
Select 2 or 3 diluted solutions for ordinary food, while for the liquid solution which has little bacteria, directly suck original sample to do the test. Place bacteria colony count plate on the sterile experiment table; uncover the film on the surface. Suck 1 mL of solution with sterile pipette, and then drip it slowly and evenly onto the count plate. Then cover the film gently and stand it for about 10 s until the medium solidify. Inoculate two count plates for each



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diluted solution. Do a blank control for each test.

Culture:
Superimpose the count plates together and place them back to the ziplock bag and seal it well. Then put it in the incubator with transparent side up. The quantity of superimposed count plates should not be more than 12. For ordinary food, the temperature of culture should be 36 ℃±1 ℃ and culture time should be 15-24 hs. While for aquatic food, the temperature of culture should be 30 ℃±1 ℃, and culture time should be 48 hs.

Surface sampling method:
Suck 1 mL of sterile phosphate buffer solution or sterile saline onto count plate, and stand it for 10 s to let the medium solidify. Uncover the upper film, and make the central filter part of the count plate contact with the surface of the sample. Then press it by hand, cover the film, and put it in the incubator for cultivation.

Counting method and report:
1, If there is just one diluted sample suitable for counting, then count the average number of the colonies on these count plates, and then multiply it by the corresponding dilution multiple. Report it as estimated CFU/mL or CFU/g.
2, If the colony numbers on count plates of every dilution ratio are more than 300 CFU, count the average number of bacteria colonies on count plates of the maximum dilution, and then multiply it by maximum dilution multiple.
3, If the colony numbers on count plates of every dilution ratio are less than 30 CFU, count the average number of bacteria colonies on count plates of the minimum dilution, then multiply it by minimum dilution multiple.
4, If no colony was found on the count plates from all dilutions of sample (including original liquid sample), report the count in terms of less than one multiplied minimum dilution multiple.
5, If the average numbers of bacteria colonies from all the dilutions are not between 30 CFU and 300 CFU, some of them are less than 30 CFU or some of them are more than 300 CFU, count the average number of bacteria colonies which is closest to 30 CFU or 300 CFU, and then multiply it by the corresponding dilution multiple.
6, If the colony numbers on count plates from two serial dilutions are both between 30 CFU and 300 CFU, calculate the average number of colonies as per below formula:

$$N = \frac{\sum C}{(n1 + 0.1n2)\,d}$$

N in the formula means the bacteria number of the sample.
$\sum C$ means the total bacteria number of these two serial dilutions.
n1 means the quantity of count plates of which the dilution multiple is lower between these two serial dilutions.
n2 means the quantity of count plates of which the dilution multiple is higher between these two serial dilutions.
d means the higher dilution ratio between two different dilution ratios.

Report of the bacteria quantity:
1, If the colony counts less than 100, round it as per rounding-off rule and use two effective digits to report it in terms of scientific notation.
2, If the colony counts more than 100 (incl. 100), round the third digit as per rounding-off rule, and use the first two digits to report it in terms of scientific notation.
3, If there are too numerous to count, report as TNTC.
4, If there are some bacteria colonies growing on the blank control count plates, the test is invalid.
5, Use CFU/g as report unit for solid samples, and use CFU/mL as report unit for liquid samples.

## Sample Type

Food, Food materials, Utensils, and Instruments.

### Storage

**FOR RESEARCH OR FURTHER MANUFACTURING USE ONLY**

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It is better to place this product in the refrigerator at 4-10 ℃, and the expiration time is one year.

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