



**A new method for identifying bacteria from all kinds of liquid samples with an exclusive and patented formulation**  
**A suitable alternative to the Pour Plate method**  
**Used in food, water and wastewater, pharmaceutical, oil, gas and petrochemical industries, aviation and other industries.**

Using the pour plate method to culture bacteria is a common and widespread method. But the special conditions of performing this method make the work time-consuming and also difficult compared to conventional agar. It is also necessary to culture immediately after the culture medium is sterilized. The MicrobCheck™ Flask test kit is designed to overcome the limitations of the pour plate method and ease of work. This kit has been formulated and produced with new technology by *ibresco* in collaboration with *Biosynth* of Swiss.

In addition to counting total bacteria (TBC), this kit can be optimized to count different types of bacteria such as *coliforms*, *E. coli*, *Pseudomonas*, *Staphylococcus*, *Salmonella*, etc.

MicrobCheck™ Flask test kit is designed as 50 ml flasks containing culture medium.

### Advantages of the MicrobCheck™ Flask over the Pour Plate Method

No thermal shock to the sample by using the MicrobCheck™ Flask and as a result accurate counting of bacteria.

The possibility of adding different volumes of the sample based on the degree of contamination.

Ease of interpretation of results.

Complete packaging with all the necessary equipment.

Providing various formulations to identify different bacteria such as *coliforms*, *E. coli*, *Pseudomonas*, *Staphylococcus*, *Salmonella*, etc.

The possibility of using it on site, without the need to have laboratory equipment and experts.

Very simple use, high accuracy and no need for culture medium preparation.

### Test Method

#### Preparation

First, open the flask and place it on a clean surface. Note that the hand does not touch the inner part of the flask door or opening. Add 1 ml of the desired sample to the flask with a syringe under sterile conditions. Then close the door. For drinking water samples (which have less contamination) and samples with low contamination probability, add 1 ml and for waste water samples, add 0.01 ml to 0.1 ml.

It is possible to prepare dilutions from highly contaminated samples and use the dilutions for inoculation.



Tap the palm of the hand with the corner of the flask to break the firm structure of the jelly.

Shake the flask vigorously for 30 seconds. It should be noted that the jelly is not lumpy and the sample is well mixed.

Collect all the gel in the bottom of the flask with a few strong taps.



Shake the flask horizontally and tap the surface until all the gel is on the bottom of the flask. Then incubate horizontally in the incubator.



### Incubation

Choosing the right temperature is greatly influenced by the source of contamination and the application of this test. If environmental contamination is to be investigated, the temperature of 30 °C is suitable. If human pathogen samples are examined, temperature 35-37 °C is better. If an incubator is not available, place the flasks in a warm place. Depending on the temperature, continue incubation for a minimum of 18 hours and a maximum of 48 hours.

**Note that** avoid unnecessary shaking and moving during the incubation test to avoid the movement of the gel.

### Results

After incubating overnight, check the flasks for growth.

In examining the total number of bacteria (TBC), the colonies are seen in red, which can be easily counted.

Colonies formed on the entire surface of the flask should be counted.

Counting colonies above 300 numbers is difficult and with low accuracy. In this case, it is better to report the relative number of bacteria by comparing the colony population pattern inside the flask with the reference images.

If the purpose is accurate counting, you can prepare dilutions from the desired sample and use the dilutions for checking.



### Reference Images



No colony observation  
No contamination of the sample



Count about 10 colonies  
 $10^4$  colonies per liter



Count about 100 colonies  
 $10^5$  colonies per liter



Count about 1000 colonies  
 $10^6$  colonies per liter



Count about 10000 colonies  
 $10^7$  colonies per liter



Count about 100000 colonies  
 $10^8$  colonies per liter

### Notes

Bubbles formed in the gel are normal and should not be counted as colonies.

Sometimes, due to the presence of motile bacteria, parts of the culture medium may be seen in a pale pink color, do not consider these parts as the result and count only the dark red colonies.

In the case of high contamination, the culture medium is completely seen as red or bright pink, so that single colonies cannot be recognized.

Avoid exposing the flask to light.

If the color of the medium changes from yellow to pale pink, if the product is before the expiration date and has been stored in proper conditions, it will not affect the performance of the medium.

If the entire culture medium is red, the culture medium will be unusable.

When counting the colonies, the flask should be lit in front of the light and all the colonies should be counted on all the walls. The best thing is to count the colonies and only use the template when counting is not possible.

In interpreting the results of this kit, the number of colonies is important. Do not consider the size of the colonies.



### Quality Control of MicrobCheck™ Flask Test Kit

To confirm the quality and performance of the MicrobCheck™ Flask kit, different dilutions can be cultured and the results checked. In counting the total bacteria (TBC), the color of the colonies will be red, and the count can also be determined according to the reference images.

Organism (ATCC)	Pattern
<i>Pseudomonas aeruginosa</i> (27853)	Red Colonies
<i>Escherichia coli</i> (25922)	Red Colonies

### Best Time to Use

The expiration date of the kits is 6 months and it is necessary to store them in the refrigerator (4-8°C). It is recommended to avoid frequent temperature changes and storage in the freezer.

### Disposal

Test kits are completely contaminated after use and bacterial growth. As a result, it is necessary to autoclave them or burn them in a furnace. If this is not possible, open the flasks under the laboratory hood and fill it with bleach liquid with a concentration of 5 to 10%. Let it sit overnight and then throw it away.

