

# Instruction Manual

## MC-Media Pad® *E. coli* & Coliform

Convenient culture media for simultaneous enumeration of *Escherichia coli* and coliform bacteria

### Application

For hygiene control, it is important to determine the microbial count in food and beverage products. MC-Media Pad® *E. coli* & Coliform is intended to simultaneously detect and enumerate coliforms and *E. coli* through special medium composition and specific chromogenic substrates for both  $\beta$ -galactosidase and  $\beta$ -glucuronidase.

The MC-Media Pad® is a pre-sterilized, ready-to-use dry culture device, simplifying testing and minimizing the quantity of waste. MC-Media Pad® is composed of a unique adhesive sheet, a test pad coated with medium and water absorption polymer, and a transparent cover film.

### Test Principles

The MC-Media Pad® is coated with selective medium and chromogenic substrate for specific detection. Once the liquid sample is inoculated onto the test pad, the sample diffuses to the whole pad through capillary action. The medium re-constitutes automatically.

If target organisms are present, coliform and *E. coli* grow as blue-green/blue and red-purple/navy colored colonies on the test pad, respectively.

### Certification

AOAC Performance Tested Method<sup>SM</sup> study (Cert. No. 011902)

MicroVal® certificate number 2017LR71

MC-Media Pad® *E. coli*/Coliform has been compared to FDA-BAM and AOAC OMA 966.24, and certified by the AOAC Research Institute Performance Tested Methods<sup>SM</sup> Program for enumeration of total coliform counts in pasteurized cream, cream cheese, ready to cook vegetable mix, vegetable juice, raw ground pork, raw chicken breast, cooked prawns, crab pâté, sandwiches, cooked chilled rice.

### Contents and Storage

100 pads (4 x 25 pads); Cat. No. 1323570002

This kit should be stored between 2–15 °C. (Refrigerated)

### Materials Required but not Provided

- Incubator (35 ±1 °C)
- Homogenizer or Blender (e.g. Cat. No. 5.42765.0001)
- Sampling bag (Recommended for homogenizer; bag with filter to eliminate food debris)
- Pipette or Pipettor and pipette tips
- Butterfield's phosphate buffer, phosphate buffered saline, saline or appropriate buffer

### Sample Preparation

#### For solid food samples

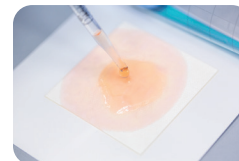
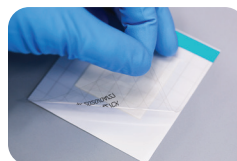
Homogenize 10 g of the test sample with 450 mL of appropriate diluent (e.g. Phosphate Buffered Saline, Butterfield's Phosphate Buffer, saline or water) with a homogenizer. If necessary, make 10-fold serial dilution.

#### For liquid samples

Sample can be applied directly. If necessary, pH of sample should be adjusted to neutral (pH 7.0 ±0.2).

### Test Procedure

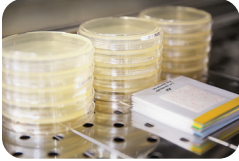
1. Open the aluminum bag, and remove the MC-Media Pad®. If necessary, write information on the cover film.
2. Lift the transparent cover film and pipette 1.0 mL of sample solution onto test pad. (It is recommended to lift the cover film diagonally for easy and secure re-sealing.)



3. Close the cover film and lightly press the edges of film to seal.



4. Incubate test plate at  $35 \pm 1$  °C for  $24 \pm 2$  hours.



5. Re-seal the opened bags and store at 2–15 °C for up to 4 weeks.



## Interpretation



Count all colored colonies (blue-green/blue and red-purple/navy) as coliform regardless of strength of color. For *E. coli* count, only red-purple/navy colored colonies should be counted. If the large number of colonies is difficult to count, colony counts can be estimated by counting colonies in one grid square and multiplying by 20.

If more than  $10^4$  of microbes are grown, the entirety of test pad may appear as stained, and it may appear that no individual colonies were formed. If this is the case, dilute the sample further and re-test. If necessary, the target colony can be picked up with a sterile needle from test pad for further analysis.

## Precautions

- The test is designed for use by quality control personnel and others familiar with testing samples potentially contaminated with coliform and *E. coli*.
- Read this instruction manual carefully before use.
- After opening the aluminum bag, unused pads should be stored in the aluminum bag sealed with tape, and kept in a cool (2–15 °C) environment. After opening, use all pads within 1 month.
- Do not expose unused pads to sunlight or ultraviolet light.
- Do not use a discolored or damaged pad.
- A wrinkle on the test pad should not affect detection.
- Small fragments of fabric on or around the test pad should not affect detection.
- Do not use the pads after the expiration date. The quality of an expired pad is not guaranteed.
- The measurement range is less than 300 cfu/pad. If more than 300 cfu/pad are counted, further dilution is recommended.
- MC-Media Pad® *E. coli* and Coliform detects coliform bacteria by existence of  $\beta$ -galactosidase. Therefore certain bacteria (genus *Aeromonas* etc.) which possess this enzyme may grow as coliform.
- *E. coli* serotype O157 is detected as coliform (blue-green/blue) because it lacks  $\beta$ -glucuronidase.
- In cases where  $\beta$ -galactosidase containing foods are applied (e.g. cheese, lactic drink or liver), the entirety of test pad may appear as stained.
- The used kit must be decontaminated by autoclaving or boiling, and disposed according to local regulations for waste.

## To place an order or receive technical assistance

For more information, please visit [www.sigmaaldrich.com](http://www.sigmaaldrich.com), go to the support tab for up-to-date worldwide contact information

