

MC-Media Pad™ “EC” instruction manual

Easy and accurate dry culture system for Microbial Counts

◆ BACKGROUND

For hygiene control, it is important to determine microbial number in foodstuffs and process environment. MC-Media Pad EC is intended to determine simultaneously coliform and *Escherichia coli* number by special medium composition and specific chromogenic substrates for both β -galactosidase and β -glucuronidase. MC-Media Pad pre-sterilized, ready-to-use dry culture devices simplify testing and minimize the quantity of waste. MC-Media Pad is composed of unique adhesive sheet, a test pad coated with medium and water absorption polymer, and a transparent cover film. MC-Media Pad is made by ISO 9001 certified factory.

◆ TEST PRINCIPLES

MC-Media Pad EC is coated with selective medium and chromogenic substrate for specific detection. Once the liquid sample is inoculated onto test pad, the sample diffuses to 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 test pad, respectively.

◆ CONTENTS and STORAGE

- 1000 plates ... code **SK04A25** (25 plates x 40)
SK04A10 (10 plates x 100)
- 100 plates ... code **SK04B25** (25 plates x 4)
SK04B10 (10 plates x 10)

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

◆ MATERIALS REQUIRED BUT NOT PROVIDED

- Incubator (35 ± 1 °C)
- Stomacher or Blender
- Sampling bag (Recommended for Stomacher; bag with filter to eliminate food debris)
- Pipette or Pipettor and pipette tips
- Maximum Recovery Diluent (MRD), Butterfield's Phosphate Buffer, Phosphate Buffered Saline, Saline or appropriate diluents according to EN ISO 6887

◆ SAMPLE PREPARATION

● For solid food stuffs

Prepare test sample according to ISO 6887 and ISO 7218. Homogenize a 10-g test portion in 90 mL of MRD, Butterfield's Phosphate Buffer, Phosphate Buffered Saline, Saline or appropriate diluents with a stomacher. If necessary, make a 10-fold serial dilution.

● For water, liquid food stuffs, or swab test sample (not included in AOAC PTM certification)

Sample can be applied directly or diluted with MRD or appropriate diluents as for solid foodstuffs. If necessary, pH of sample should be adjusted to neutral (pH 7.0 ± 0.2).

◆ TEST PROCEDURE

● General Operation

1. Open aluminum bag, and take MC-Media Pad. If necessary, write information on the cover film.
2. Lift the cover film, and drop 1mL of sample solution onto test pad.
3. Replace the cover film, and lightly press the edges of film to seal. (It is recommended to lift the cover film diagonally for easy and sure re-sealing.)
4. Incubate test plate at 35 ± 1 °C for 24 ± 2 hours.

● Other Application

MC-Media Pad is also available for Wiping/Stamping technique, Membrane filter method, and Airborne falling bacteria test. MC-Media Pad website provides detailed information. (<https://www.jnc-corp.co.jp/MC-MP/>)

◆ 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.

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. Analyze obtained results according to ISO 7218. If more than 10⁴ 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 sterile needle from test pad for further analysis.

◆ PRECAUTIONS

Safety

1. The test is designed for use by quality control personnel and others familiar with testing samples potentially contaminated with *E. coli* and coliform bacteria.
2. Use personal protective equipment such as gloves, laboratory coat and eye protection.
3. Treat samples and inoculated devices as potentially biohazardous. All used test kits and devices must be sterilized by autoclaving or boiling. Dispose according to local regulations.

General

1. Read this instruction manual carefully before use.
2. After opening the aluminum bag, unused plates should be stored in the aluminum bag sealed with tape, and kept in a cool (2-15 °C) environment. After opening, use all plates within 1 month.
3. Do not expose unused plates to sunlight or ultraviolet light.
4. Do not use a discolored or damaged plate.
5. A wrinkle on test pad should not affect detection.
6. Small fragments of fabric on/ or around test pad should not affect detection.
7. Do not use the plates after the expiration date. The quality of an expired plate is not warranted.
8. The measurement range is less than 300 cfu/plate. If more than 300 cfu/plate are counted, further dilution is recommended.
9. In case of applying food samples containing β -galactosidase (e.g. cheese, lactic drink or liver), the entire test pad may appear stained.
10. MC-Media Pad EC detects coliform bacteria by existence of β -galactosidase. Therefore, bacteria that possess this enzyme (genus *Aeromonas*, etc.) may appear as coliform colony.
11. The detection of *E. coli* is based on the ability of these strains to produce β -glucuronidase. 97% of the *E. coli* strains are glucuronidase positive and will provide reliable results. 3% of the *E. coli* strains (e.g. ATCC 8739) are WEAKER color development in their glucuronidase production and cannot be properly detected with MC-Media Pad EC.
12. *E. coli* serotype O157 is detected as coliform because of lacking β -glucuronidase.
13. MC-Media Pad EC may fail to detect coliform bacteria due to their biochemical characteristics (e.g. lacking related enzyme, etc.).

◆ METHOD VALIDATION

MC-Media Pad EC is approved as alternative method for EN ISO 4832:2006 and EN ISO 16649-2:2001 by MicroVal (Cer. No. 2017LR71) for a broad range of foods. AOAC *Performance Tested Method*SM study (Cert. No. 011902)

MC-Media Pad EC was compared to EN ISO 4832:2006 and EN ISO 16649-2, and certified by the AOAC Research Institute *Performance Tested Methods*SM Program for enumeration of total coliform counts and *E. coli* 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.

◆ LIMITATION of WARRANTY

The Products are covered by the applicable JNC Corporation standard warranty. NO OTHER EXPRESS OR IMPLIED WARRANTY IS MADE WITH RESPECT TO THE PRODUCTS. JNC EXPRESSLY EXCLUDES THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE. If product is defective, JNC and JNC's authorized distributor will provide a replacement or refund at the purchase price.

◆ CONTACT and FURTHER INFORMATION

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