CompactDry™ ETC

Simple and Easy Dry Media for *Enterococcus*

Background

It is important to detect and determine the bacterial number in foodstuffs and the environment to monitor the degree of cleanliness as well as their sanitary safety. Mixing and dilution culture method has been widely used to determine the microbial count. The method requires much time and complicated operations such as preparation of hot agar, mixing and dilution uniformly and/or smearing. To reduce the operation time and make it easier to perform the bacteria culture test, Shimadzu Diagnostics Corporation has successfully developed a new device based on new concept and technology.

CompactDry™ ETC is a simplified medium to determine *Enterococcus* species, including *E. avium*, *E. casseliflavus*, *E. durans*, *E. faecalis*, *E. faecium*, *E. gallinarum*, *E. haemoperoxidus*, *E. hirae*, *E. malodoratus*, *E. mundtii*, *E. pseudoavium*, and *E. thailandicus*, by the combination of selective agents and chromogenic substrates.

Features and Benefits

1) Small and compact plate: Need only small physical spaces for storing, testing and incubating.
2) Ready to use and portable plate: No need to prepare medium, which eliminates waste of medium as well as apparatus to prepare the medium. Good for an emergency and a field test.
3) Sample diffuses automatically and evenly into a plate.
4) Easy to store: 18 month shelf life at 1-30ºC.
5) Measurable after incubation for 24 hours.
6) Blue/blue green colonies for *Enterococcus* species are observed, and picking of colonies is easy.
7) Good correlation with Spread Plate and MPN methods: Maintain the continuity of data accumulated.

Certification by AOAC

The CompactDry™ ETC has been compared to Nordic Committee on Food Analysis (NMKL) reference method 68 and certified by the AOAC Research Institute *Performance Tested Methods*℠ Program (Certificate No. 111902) for enumeration of *Enterococcus* spp. in frozen ground beef patties, raw beef, fresh cooked prawns, tuna paté, cream, custard, lettuce, parsley, pasta salad, and egg salad sandwiches.

Test Kit Components

1) CompactDry™ ETC Plates

Additional Reagents and Supplies Required, Not Provided

1) Maximum recovery diluent (MRD) – Prepare according to NMKL 68 or source commercially
2) Filtered Stomacher bags

Apparatus

1) Lab paddle blender, blender, or vortex mixer for homogenizing sample
2) Pipets – 1 mL
3) Incubator – 37 ± 1°C

Operating Procedure

Preparation of sample

1) Bacterial number in solid foodstuffs:
   Add buffering solution to the sample, and homogenize using for 1 min. Drop 1 ml of specimen (to be further diluted if necessary) in the middle of a dry sheet of CompactDry™.
2) Bacterial number in water or liquid foodstuffs:
   Drop 1 ml of specimen (to be diluted if necessary) in the middle of a dry sheet.
3) Bacterial number in swab test specimen:
   Drop 1 ml of wiping solution (to be diluted if necessary), obtained from a cotton swab, in the middle of a dry sheet. It is recommended to use Swab Test ST-25PBS (Code 06698) available as an optional kit.

Directions

1) Open aluminum pouch, and remove a set of 4 plates.
2) Detach the number of plates needed by bending up and down while pressing the lid. Alternatively, use a set of 4 connected plates for serial dilutions of one sample.
3) Remove the lid of the plate, and drop 1 ml of specimen in the middle of a dry sheet. The sample diffuses automatically and evenly over the sheet (a medium size of 20 cm^2) and rehydrates the gel.
4) Replace the lid of the plate, turn over the capped plate, and then incubate for 20 - 24 hours at 37 ± 1 ℃.
5) Count blue/blue green colonies for *Enterococcus* species. White paper placed under the plate can be useful for counting.

Precaution for use

1) During inoculation, do not touch the surface of medium and/or tip of dropper, and be careful to avoid any contamination by falling microorganism.
2) During incubation, keep lid of CompactDry™ tight to avoid any possible dehydration.
3) It is recommended to use a stomacher bag with filter to eliminate risks of carry-over of tiny pieces of foodstuffs into the surface of the medium.
4) Specimen should be diluted by buffer solution to the level of concentration of less than 200 CFU/plate.
5) If bacteria of more than 10^4 CFU are inoculated in a plate, no independent colonies will be formed, and the whole medium will turn blue.
6) Specimens with high viscosity, deep color, and too high or too low pH may affect results. The specimen should be analyzed only after the cause has been eliminated by dilution, buffering, or other means.

Interpretation

Enterococcus species forms blue/blue green colonies of 1-2 mm in diameter by chromogens contained in a medium

Precaution for interpretation

1) The plate size of the CompactDry™ ETC plate is 20 cm^2, and the back of plate has a carved grid of 1 cm x 1 cm to make colony counting easier. When it is difficult to count the colonies due to a large number of colonies grown in the medium, the total bacterial number can be obtained by multiplying the average number of colonies from representative grids (1 cm x 1 cm) by 20. The plate count should be adjusted for the dilution factor.
2) CompactDry™ ETC shows equivalent performance to the reference method, NMKL Method 68, 5th edition 2011. *Lactobacillus gassari* can cause false positive results.

Warning and Direction for Use

1. General precautions

1) Read and follow precisely the warnings and directions for use described in the package insert and/or label.
2) Do not use the product after its expiration date. The quality of expired products is not warranted.
3) Do not use the product that contains any foreign materials, is discolored or dehydrated, or has a damaged container.
4) After opening the aluminum pouch, any unused plates should be returned to the aluminum pouch and sealed with tape to avoid light and moisture. Use plates as soon as possible.

2. Safety Precautions

1) In case that media or reagents touches eyes or mouth, immediately wash with a plenty of water, and consult a physician.
2) Manipulations with microorganisms always involve certain risks of laboratory -acquired infections. Manipulations should be practiced under the supervision of skillful specialist with biohazard protection measures.
3) Any laboratory equipment and medium that touches with specimen should be regarded as infectious in the laboratory.

3. Precautions for disposal of waste

Any media, reagents and materials must be sterilized by autoclaving or boiling water after use, and then disposed as industrial waste products according to the local laws on waste disposal and cleaning.

4. Limitation of Warranties

If CompactDry™ plate has proven to be defective due to Shimadzu Diagnostics Corporation's negligence, Shimadzu Diagnostics Corporation or Shimadzu Diagnostics Corporation's authorized distributor will replace or refund at the purchase price of the plate.

Storage and Shelf life

Storage

Store at room temperature 1-30℃.

Shelf life

Eighteen (18) months after manufacturing.
Shelf life is printed on the labels of outer box, aluminum pouch.

Package

CompactDry™ ETC1400 plates ..... Code 54056

Further information

Customer Support Section,
Shimadzu Diagnostics Corporation
3-24-6, Ueno, Taito-ku, Tokyo 110-0005 Japanshimad
TEL: +81-3-5846-5707 / FAX: +81-3-5846-5629
E-mail: contact@sdc.shimadzu.co.jp

Manufactured by
Shimadzu Diagnostics Corporation
3-24-6, Ueno, Taito-ku, Tokyo 110-0005, Japan