CompactDry™ LS

Simple and Easy Dry Medium for *Listeria* species

∗Background

It is important to detect and measure the total viable count in foodstuffs and environment to monitor the degree of cleanness as well as their sanitary safety. Pour Plate method has been widely used to determine the microbial count. The method requires much time and complicated operations such as preparation of hot agar kept at 45 – 50 °C and mixing and dilution uniformly. To save the time of operator and make it possible for anyone to perform the microbial count test without difficulty, Shimadzu Diagnostics has successfully developed CompactDry™ based on new concept and technology that may be applicable for almost all food industries, which requires a simple and easy manipulation to add a drop of specimen on the device.

*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: eighteen-month shelf life at room temperature.
5) Measurable after incubation for 24 hours.
6) Light blue/blue colonies for Listeria species are observed, and fishing of colonies is easy.
7)Good correlation with Spreading Plate method: Maintain the continuity of data accumulated.

* Intended Use

This product is intended for use by microbiologists for the enumeration of *Listeria* species in food and related samples.

∗ Test Kit Components

1) CompactDry™ LS Plates

*Additional Reagents and Supplies Required, Not Provided

1) Buffered Peptone Water (BPW)
2) Filtered Stomacher bags

Apparatus

1) Stomacher or equivalent for homogenizing sample.
2) Pipets – 1 mL
3) Incubator – capable of maintaining 35 or 37 ± 1 °C

*Operating Procedure

Preparation of specimen

1) Bacterial number in solid foodstuffs:
   Add buffering solution to the sample and homogenize by Homogenizer. Drop 1ml 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 1ml 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), which is obtained from a cotton swab, in the middle of a dry sheet. It is recommended to use CompactDry Swabs PBS (450002-PBS-0500) available as an optional kit.
4) For effective recovery of *Listeria*, it is recommended that samples should be inoculated to CompactDry™ after 1 hour of resuscitation step at 20 °C by Buffered Peptone Water (BPW).
   In the case of solid foodstuffs, samples should be homogenized by BPW. In the case of liquid samples and swab samples, they should be inoculated to small amount of BPW. This resuscitation step does not affect the bacterial number. This resuscitation step is according to ISO 11290-2, horizontal method for the detection and enumeration of *Listeria monocytogenes.*

∗ Direction for CompactDry™ LS

1) Open the aluminum pouch and take out a set of 4 plates.
2) Detach the necessary number of plate(s) from a set of four by bending up and down while pressing the lid. Use a connected set of four plates when serial dilution measuring is intended. Write the appropriate information in the memorandum section.
3) Remove the lid from the plate, pipette 1 mL of sample in the middle of the dry sheet and replace the lid. Specimen diffuses automatically and evenly over the entire sheet (20 cm^2) to transform it into a gel.
4) Invert the lidded plate and place in incubator at 24 ± 2 - 48 ± 3 hours or 22 ± 2 °C at 35 or 37 ± 1 °C.
5) From the backside of the plate, count the number of light blue/blue colonies in the medium. White paper placed under the plate can make colony count easier.

Precaution for use

1) Do not use CompactDry™ LS for human and animal diagnosis.
2) During inoculation, do not touch the surface of medium.
3) During incubation, keep lid tight to avoid any possible dehydration.
4) Use of filtered stomacher bags is recommended to eliminate risks of carryover of tiny pieces of foodstuffs onto the surface of the medium.
5) The enumeration range is 1 – 300 cfu/plate. Dilute samples further in the appropriate diluent as necessary to achieve a concentration level in the countable range.
6) If the nature of sample affects the reaction of the medium, inoculate the sample only after the factor has been eliminated by means such as dilution, pH adjustment, or others. This may include samples with high viscosity, deep color, or too high or too low pH.

Interpretation

Listeria species form light blue/blue colonies of 1-2 mm in diameter by chromogens contained in a medium.

*Precaution for interpretation

1) If more than 10^4 cfu/mL were inoculated onto a plate, no distinguishable colored colonies will form, and the entire plate may become colored.
2) The medium size is 20 cm^2, and the back of container 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 great large number of colonies grown in the medium, the total colony number can be obtained by multiplying 20 by an average number of colonies per grid (1 cm x 1 cm) calculated from representative grids.
3) It is known that *Listeria Ivanovic* tends to grow slowly and *Listeria Seeligeri* tends to be inhibited in this plate.

*Warning and Direction for Use

1. General precautions

1) Read and precisely follow 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 the product is not guaranteed after its shelf life.
3) Do not use products that contain any foreign materials, are discolored, or dehydrated, or has a damaged container.
4) Use plates as soon as possible after opening. Any unused plates should be returned to the aluminum pouch sealed with tape to avoid light and moisture and stored at room temperature.
5) Lid tightly after inoculation to avoid dehydration of gelled medium.

2. Safety Precautions

1) Wash immediately with water medium or reagent comes into contact with eyes or mouth. Consult a physician.
2) Manipulations with microorganisms involve certain risks of laboratory-acquired infections. Practice manipulations under the supervision of trained laboratory personnel with biohazard protection measures.
3) Treat laboratory equipment or medium that comes in contact with the sample as infectious and sterilize appropriately.

3. Precautions for disposal of waste

Sterilize any medium, reagent or materials by autoclaving or boiling after use, and then dispose of it as industrial waste according to local laws and regulations.

4. User Responsibility

1) It is the user's responsibility in selecting any test method to evaluate a sufficient number of samples with particular foods and microbial challenges to satisfy the user that the chosen test method meets the user's criteria.
2) It is the user's responsibility to determine that any test methods and results meet its customers' or suppliers' requirements. The user must train its personnel in proper testing techniques.
3) It is the user's responsibility to validate the performance of this method for use with any non-certified matrix.

5. Limitation of Warranties

CompactDry™ plates are manufactured at an ISO 9001:2015 facility.
If any CompactDry™ plate is proven to be defective by fault of the manufacturer or its authorized distributors, they may replace or, at their discretion, refund the purchase price of any plate. These are the exclusive remedies.

Storage and Shelf life

Storage: Keep at room temperature (1 – 30 °C)
Shelf life: Eighteen (18) months after manufacturing.
Shelf life is printed on both label of outer box and aluminum pouch.

∗ Package

CompactDry™ LS 100 plates Code HS8811

∗ Further information

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