TM
CompactDry LM

Simple and Easy Dry Media for *Listeria monocytogenes*

* Background

It is important to detect and determine the bacterial number in foodstuffs and environment to monitor the degree of cleanness as well as their sanitary safety. The conventional method using an agar medium requires much time and complicated operations such as preparation of hot agar, mixing and dilution uniformly and/or smearing.

CompactDry^{TM} LM is a simplified medium for detection and enumeration of *Listeria monocytogenes*.

* 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: Twenty-four (24) month shelf life at room temperature.
5) Measurable after incubation for 24 - 48 hours.
6) Red colonies with or without blue surrounds for presumptive *Listeria monocytogenes* are observed by chromogenic substrates, and fishing of colonies is easy.

*Intended Use

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

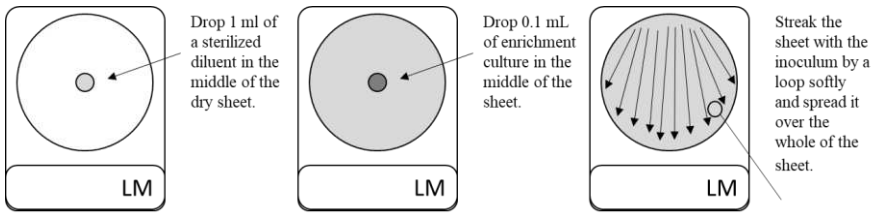
Operating Procedure for Detection

Preparation of specimen

1) Detection in solid foodstuffs, water or liquid foodstuffs
   Add 9 times volume of half-Fraser broth to the sample, and homogenize by Homogenizer. Incubate at 30 ± 1°C for 25 ± 1 hours for enrichment culture.
2) Detection in wiped sample
   Add 9 times volume of half-Fraser broth to the wiping solution. Incubate at 30 ± 1°C for 25 ± 1 hours for enrichment culture.

Direction

1) Open aluminum pouch, and take out a set of 4 plates.
2) Detach the quantity you need from a set of four by bending up and down while pressing the lid.
3) Take off the lid of the plate, and drop 1 ml of a sterilized diluent (ex. saline) in the middle of a dry sheet to transform the whole of the sheet to gel.
4) Dispense 0.1 mL of enrichment culture in the middle of the sheet. Streak the sheet with the inoculum from top to bottom by a loop softly and spread it over the whole of the sheet in order to get single colonies.
5) Turn over the capped plate after putting the lid again, and then incubate for 24 ± 2 hours at 37 ± 1 °C. If colonies of presumptive *L. monocytogenes* are evident, the incubation may be stopped at this stage. If they are not evident, incubate for additional 24 ± 2 hours at 37 ± 1 °C.



*Operating Procedure for Enumeration

Preparation of specimen

1) Viable count in solid foodstuffs
   Add 9 times volume of Buffered Peptone Water (BPW ISO) (Code 05121) to the sample, and homogenize by Homogenizer. Pipette 1mL of homogenized specimen (to be further diluted if necessary) in the middle of a dry sheet of CompactDry ^{TM} LM.
2) Viable count in water or liquid foodstuffs
   Pipette 1mL of liquid sample (to be diluted if necessary) in the middle of a dry sheet of CompactDry^{TM} LM.
3) Viable count in wiped sample
   Inoculate 1mL of wiping solution (to be diluted if necessary) in the middle of a dry sheet of CompactDry ^{TM} LM. It is recommended to use CompactDry Swab PBS (450002-PBS-0500) available as an optional kit.

Direction

1) Open aluminum pouch, and take out a set of 4 plates.
2) Detach the quantity you need from a set of four by bending up and down while pressing the lid. Use a set of four plates being connected when a series of diluted samples is inoculated.
3) Take off the lid of the plate, and dispense 1 ml of specimen in the middle of a dry sheet. Specimen diffuses automatically and evenly into all over the sheet (a medium size of 20 cm^2) to transform it into gel.
4) Turn over the capped plate after putting the lid again, and then incubate for 24 + 2 hours at 37 + 1 °C. If colonies of presumptive L. monocytogenes are evident, the incubation may be stopped at this stage. If they are not evident, incubate for additional 24 + 2 hours at 37 + 1 °C.

*Precaution for use

Precaution for Detection and Enumeration

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 tight of CompactDry^{TM} 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.

Precaution for Detection

4) During streaking, do not put strength into a loop and slip it softly on the surface of a sheet. A loop which has a large diameter and a smooth surface is suitable for streaking.

Precaution for Enumeration

5) Specimen should be diluted by buffer solution to the level of concentration of less than 300 cfu/plate.
6) If bacteria of more than 10^4 cfu are inoculated in a plate, no independent colonies are formed, and the whole medium gets stained.
7) If the nature of specimen does affect the result, the specimen should be inoculated only after the cause is eliminated by means of such as dilution and others. For example: specimens such as high viscosity, deep color, and too high or too low pH.

*Interpretation in Detection

1) Interpret red colonies with or without blue surrounds as presumptive positive for *Listeria monocytogenes*.
2) If a volume of *L. monocytogenes* is too much, no single colonies are formed and the whole of a sheet or the streaked part of a sheet looks red-colored. Interpret the result as presumptive positive in this case too.

*Interpretation in Enumeration

3) Count red colonies with or without blue surrounds for presumptive *L. monocytogenes*.

*Interpretation in Detection and Enumeration

4) If presumptive colonies of *L. monocytogenes* are observed, perform confirmation tests by ISO11290-1:2017, ISO11290-2:2017 or other methods.

*Precaution for interpretation

1) *Listeria ivanovii* also forms red colonies with or without blue surrounds like *L. monocytogenes*.
2) *Listeria* spp. except for *L. monocytogenes* and *L. ivanovii* form blue/green colonies. Bacteria other than *Listeria* spp. are inhibited by selective agents in the medium, or do not form colored colonies even if they grow. Rarely some of *Bacillus* spp. may form relatively large, flat and orange colonies.
3) *L. monocytogenes* may form orange, reddish-brown or reddish-purple colonies in addition to red colonies.
4) White paper placed under the plate can make it easy to observe colonies.
5) The plate size of LM plate is 20 cm^2, and the back of container has a carved grid of 1cm x 1cm 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 bacterial number can be obtained by multiplying 20 by an average number of colonies per grid (1cm x 1cm) calculated from representative grids.

*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. Quality of the product is not guaranteed after its shelf life.
3) Do not use product that contains any foreign materials, is 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 bag and sealed with tape to avoid light and moisture.
5) Cap tightly after inoculation to avoid dehydration of gelled medium.

2. Safety Precautions

1) Wash immediately with water if 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 into contact with the specimen as infectious.

3. Precautions for disposal of waste

Sterilize any medium, reagent and materials by autoclaving or boiling after use, and then dispose 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 ^{TM} plates are manufactured at an ISO 9001:2015 facility.

If any CompactDry ^{TM} 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: Twenty-four (24) months after manufacturing.
Shelf life is printed on both label of outer box and aluminum bag.

Package

CompactDry^{TM}	LM	40 plates	Code HS9902
CompactDry^{TM}	LM	100 plates	Code HS9901

Further information

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Issue date: July 2023
* Revised : February 2024
SDE-IFU-LM-2024-V02