＊＊2025年２月改訂
＊2023年４月改訂

菌数測定用簡易培地
酵母・カビ測定用

＊コンパクトドライ™ YM

＊――― 開発の経緯および特徴 ―――

食品の安全性を確保する上で、食品や環境中の微生物数を測定することは極めて重要です。従来より行われている汚染指標菌の混釈培養検査は培地の準備や試料の混釈操作に多くの労力と経験を必要としていました。

コンパクトドライ™ YMは、このような負担を軽減し、誰でも、どこでも、簡便に混釈培養が行えるよう開発した培地で、試料液を加えるだけの操作で菌数検査が実施できます。

［特　徴］

1）コンパクトなサイズなので場所をとりません。
2）培地調製の必要がありません。
3）接種した試料は自然に均一に拡散します。
4）室温で保存可能です。
5）コロニーの発色が明りょうで、釣菌も容易にできます。
6）従来の培養法のデータと整合性がとれます。

――― 操　作　法 ―――

［試料の調製、接種方法］

１．固形食品材料の菌数測定

材料に希釈水(注1)を添加し、ストマッカーで均質化します。試料液1 mL（必要に応じて希釈する）を取り、本品に接種します。

注１：生理食塩水，リン酸緩衝希釈水など，適切な希釈水を使用してください。

２．水や液状食品の菌数測定

試料液１mL（必要に応じて希釈する）をそのまま本品に接種します。

＊＊/＊**３．ふき取り材料の菌数測定**

綿棒などで食品や環境材料をふき取ったふき取り液１mL（必要に応じて希釈する）を本品に接種します。

簡易ふき取りキット（PBS）CCⅡガンマ線滅菌（コード06545）又は簡易ふき取り用キットSwab Test ST-25 PBS（コード06698）を使用すると便利です。

［使用法］

1）アルミ袋を開封し、４連のプレートを取り出します。
2）検査に必要な枚数のプレートを折り曲げて切り離します。段階希釈した試料液を接種するときは切り離さずそのまま使用すると便利です。
3）プレートのフタを開け、シートの中央部に試料液１mLを接種します。試料液はシート全体（培地面積は20 ㎠）に均一に広がりゲル化します。
4）フタをした後、倒置しフラン器に入れて、25±1℃で3 ～ 7日間培養します。
5）発色したコロニーを裏面からカウントします。下に白い紙などを置いてカウントするとコロニーが見やすくなります。

――― 操作上の留意事項 ―――

1）試料の接種に際しては、落下菌による汚染や培地面に手指が触れるなどの汚染に注意してください。
2）培養中の乾燥を防ぐため、フタはしっかりと閉めてください。
3）食材片の持ち込みによる影響を防ぐため、なるべくフィルター付きストマッカー袋を使用してください。
4）試料は1プレートあたり300 cfu以下になるように希釈水などで希釈してから接種します。滅菌希釈液Ⅱ（コード01553）を使用すると便利です。
＊5）食品自体が培地の反応に影響を与えるものは、希釈水などで希釈する等、その原因を取り除いてから接種してください。
例：粘度の高いもの、濃く着色したもの、発色基質と反応するもの、pHが極端に高いかまたは低いもの。
＊＊/＊6）本品に緩衝能が強い希釈水（例：緩衝ペプトン水（BPW）など）を使用すると、コロニー発色が弱くなることがありますので、試料の希釈には以下の希釈水をご使用下さい。
例：生理食塩水、リン酸緩衝希釈水、ペプトン加生理食塩水。
ふき取り検査には、簡易ふき取りキット（PBS）CCⅡガンマ線滅菌（コード06545）をご利用下さい。

――― 判　定　法 ―――

［判定法］

発色酵素基質X-Phosが培地中に含まれており、多くの酵母は緑～青色に発色します。カビはカビ自体の着色した綿状のコロニーを形成します。

＊＊/＊［判定上の注意事項］

1）酵母の一部には、緑～青色に発色せず、白色コロニーを形成するものもあります。
2）１プレートあたり10^4 cfu以上の菌が接種されるとコロニーが形成されないため発色コロニーが現れず、シート全体が着色したようになります。
3）シート状培地の面積は20 ㎠です。また、プレート底面には計測に便利な格子（1 cm × 1 cm）を薄くつけてあります。菌数が多い場合は、代表的な格子内のコロニー数を算出して、その値に20を掛けて菌数を算出します。

――― 使用上または取扱い上の注意事項 ―――

１．一般的な注意事項

1）この添付文書をよく読み、記載された操作法、注意に従って使用してください。
2）使用期限を過ぎた製品は品質を保証できないので使用しないでください。
3）使用前に容器の破損、異物混入、変色、吸湿等の異常が認められた培地は使用しないでください。
4）残ったプレートは、アルミ袋に入れ、テープ止めをして防湿および遮光保存し、早めに使用してください。

２．危険防止上の注意事項

1）試薬等が目や口に入った場合には、水で十分に洗い流し、医師に相談し、指示を受けてください。
2）微生物の取り扱いは常に感染の危険があるので、取り扱いにあたっては熟練した人の指導のもとに、バイオハザード対策を実施したうえで使用してください。
3）検体に接触した器材、培地等は感染の危険があるものとして取り扱いください。

３．廃棄上の注意事項

使用済みの培地は高圧蒸気滅菌または十分に煮沸するなど殺菌処理をしたのちに廃棄してください。

――― 貯法・使用期限 ―――

［貯　法］

室温（1～30℃）に保存してください。

［使用期限］

製造後18ヵ月間。
外箱のラベルおよびプレートのアルミ袋に使用期限を表示してあります。

＊――― 包装単位 ―――

コンパクトドライ™ YM　40枚 …… Code 06746
コンパクトドライ™ YM 240枚 …… Code 06747

＊――― 問い合わせ先 ―――

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＊＊CompactDry™ YM

Simple and Easy Dry Medium for Yeasts and Molds

＊＊Background

Yeasts and molds can cause various degrees of food decomposition. Invasion and growth may occur on virtually any type of food if environmental conditions are not limiting. Commodities such as cone, small grains, legumes, nuts, and fleshy fruits can be invaded prior to harvesting as well as during storage. Yeasts and molds are distributed widely in decaying plant materials, soil, and air. Their presence on unprocessed plant and animal foodstuffs is almost assured by harvesting, handling, distribution, and storage practices used in food industries, and inadequate preservation of these foodstuffs can result in mycological spoilage. Detection and enumeration of yeasts and molds in food is an integral part of any good quality assurance program and can reflect the effectiveness of sanitation practices, processing schemes, and distribution conditions.

To save operator time and allow a trained laboratory scientist to perform the microbial count test without difficulty, the CompactDry™ was developed based on new concept and technology applicable to the food industry. CompactDry™ 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 the waste of medium as well as the apparatus to prepare the medium. Good for an emergency and field testing.
3) Sample diffuses automatically and evenly into the plate: No need for mixing and dilution after sampling.
＊4) Dried plate with 18 month shelf life after manufacturing at room temperature: Easy to store. Once a liquid sample is added, the dry coated medium transforms into a gel and the plate is ready to incubate.
5) Blue color development by a chromogenic enzyme substrate: Easy to read the results. Isolated colonies can be subcultured individually to other media.
6) Good correlation with spread plate method: Maintain the continuity of data accumulated.

Certification by AOAC

The CompactDry™ YM has been compared to FDA BAM Chapter 18 for Yeasts, Molds, and Mycotoxins (2001) and certified by the AOAC Research Institute *Performance Tested Methods*℠ (PTM) Program (Certificate No. 100401) for enumeration of yeasts and molds in fruit products (fresh apples, frozen blueberries, dried banana chips, orange juice, and fresh grapefruit). A matrix extension comparing the CompactDry™ YM to ISO 21527-1:2008 for cooked deli turkey, fresh whole tomatoes, Wensleydale cheese, sliced white bread, mayonnaise, and orange juice was approved in 2015.

＊＊Test Kit Components

1) CompactDry™ YM Plates

Additional Reagents and Supplies Required, Not Provided

1) 0.1% Peptone water.—Peptone at 1 g/L, pH 7.0 ± 0.2, autoclave 15 min at 121 ℃.
2) Maximum recovery diluent (MRD) – Prepare according to ISO 21527-1:2008.
3) Filtered Stomacher® bags

Apparatus

1) Blender or Stomacher™ or equivalent for homogenizing sample.
2) Pipets – 1 mL
3) Incubator – 25 ± 1℃

Operating Procedure

Sample Preparation

1) Prepare appropriate diluent: 0.1% peptone water for fruit products or MRD for other matrixes and orange juice. Autoclave for sterilization.
2) Viable count in solid foodstuffs
For fruit products, weigh 25-50g of sample and add the appropriate amount of 0.1% peptone water to the weighed sample to achieve 10^{-1} dilution. Homogenize in a stomacher for 2 min ± 15 s. For deli turkey, fresh whole tomatoes, cheese, bread, and mayonnaise, weigh 10 g of sample and add 90 mL MRD. Homogenize in a stomacher for 1 min ± 10 s.
3) Viable count in liquid foodstuffs
For orange juice, use without dilution, dilute 25-50 g in 9x volume of 0.1% peptone water (BAM method) or dilute 1 mL in 9 mL MRD (ISO method), or dilute further if viable count is >150 CFU/plate. Vortex to mix.
＊4) Viable count in swab test sample (not included in AOAC PTM certification)
Use wiping solution (without dilution or diluted if necessary in MRD) obtained from the cotton swab. It is recommended to use Swab Test ST-25 PBS (Code 06698) available as an optional kit.

Direction for CompactDry™ YM

1) Open aluminum bag, and remove a set of 4 plates.
2) Detach 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.
3) Remove the cap from the plate, pipette 1 mL of sample (to be diluted further if necessary) in the middle of the dry sheet, and replace cap. Sample diffuses automatically and evenly over the entire sheet (total medium of 20 cm^2) to transform it into gel within seconds.
4) Write the appropriate information on the memorandum section. Invert the capped plate and place in incubator at 25 ± 1℃ . Incubate 3 to 7 days.
5) From backside of the plate, count the number of colored colonies (blue) and "cottony" colonies in the medium. White paper placed under the plate can make colony counting easier. For large numbers of colonies, use the grids carved on the backside consisting of 1 cm x 1 cm, or 0.5 cm x 0.5 cm, at the four corners.
6) The enumeration range of the CompactDry™ YM is 1 – 150 CFU/plate. Dilute samples further in the appropriate diluent as necessary to achieve a concentration level in the countable range.

Precaution for use

1) Do not use CompactDry™ YM for human or animal diagnosis.
2) During inoculation, do not touch the surface of medium.
3) During incubation, keep cap tight to avoid any possible dehydration.
4) Use of filtered stomacher bags is recommended to eliminate risks of carry over of tiny pieces of foodstuffs onto the surface of the medium.
5) If more than 10^4 CFU/mL were inoculated onto a CompactDry™ YM plate, no distinguishable colored colonies will form and the entire plate may become colored.
＊＊6) If the nature of sample does affect the reaction of the medium, inoculate the sample only after the factor has been eliminated by such means as dilution, pH adjustment, or other. This may include samples with high viscosity, that are colored, that react with the chromogenic enzyme substrate, or have too high or too low pH.
＊＊7) If a diluent with high buffering capacity (e.g. buffered peptone water (BPW)) is used or this product, the coloration of colonies may be weakened. Please use the diluents such as saline solution, phoshate buffered solution, or peptone salt solution.
For surface sampling, it is recommended to use Swab Test ST-25 PBS (Code 06698) available as an optional kit.

Interpretation

The CompactDry™ YM plate consists of a special spread sheet containing nutrients, antibiotics to inhibit bacterial growth, a chromogenic enzyme substrate, X-phos, and a cold water-soluble gelling agent in a unique plastic dish. Yeasts and molds form blue colonies. While most colonies are some shade of blue, any colored colony should be counted. In addition, mold colonies may have a diffuse or cottony appearance.

Precaution for interpretation

1) The full plate size is 20 cm^2. The backside contains carved grids of 1 cm × 1 cm and 0.5 cm x 0.5 cm to make colony counting easier. If large numbers of colonies are present on the medium, the total viable count can be obtained by averaging the number of colonies per large grid (1 cm × 1 cm), counted from several grids, and multiplying by 20. Alternatively, when large numbers of colonies are present, the total viable count can be obtained by averaging the number of colonies per small grid (0.5 cm × 0.5 cm) and multiplying by 80.
＊＊2) If more than 10^4 cfu/mL were inoculated onto a CompactDry™ YM plate, no distinguishable colored colonies will form and the entire plate may become colored.

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™ 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℃)
Shelf life: Eighteen (18) months after manufacturing.
Shelf life is printed on both label of outer box and aluminum bag.

＊＊Package

CompactDry™ YM 40 plates …… Code 06746
CompactDry™ YM 240 plates …… Code 06747

＊＊Further information

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