

Limitations

If a fungal infection is strongly suspected and the test result is negative, it may be appropriate to retest giving more care to specimen collection. Media color change and colony growth will vary depending upon animal's physical condition and medical history. Samples from animals that have been treated for ringworm (prescriptions, OTC products, herbs, shampoos, etc.) may not grow macroscopic colonies but may still show media color change and microscopic growth with distortions to hyphae and spores.

Some soaps and topical agents may cause an immediate color change. If this occurs, discard the test, wash area and re-sample.

InTray Dermatophyte is an agar medium that is susceptible to condensation collection within the inner seal, especially when stored at low temperatures and/or having been exposed to extreme temperature fluctuations. If moisture is visible on the surface of the InTrays, dry them (with the seal removed and InTray label in a position allowing for air flow) under a BSL-2 cabinet just prior to inoculation. There should be no visible droplets of moisture on the surface of the agar when they are inoculated. The surface of the dried medium should be smooth and should not show signs (webbed ribbing pattern on the agar surface) of desiccation.

References

1. Tille P, et al. (2014) Bailey & Scott's Diagnostic Microbiology, Elsevier: p. 450.
2. Kwon-Chung, KJ and Bennett, JE (1992) Medical Mycology, Lea and Febiger: Philadelphia.
3. Murray, PR, Baron, ET, Pfaller, MA, Tenover, FC, Yolkem, RH, (1995) Manual of Clinical Microbiology 6th ed., American Society for Microbiology: Washington, D.C., pp. 709-722.
4. Larone, DH (1995) Medically Important Fungi: A Guide to Identification, 2nd ed., American Society for Microbiology: Washington, D.C.
5. Singh S and Beema PM (2003) Comparative study of different microscopic techniques and culture media for the isolation of dermatophytes, Indian J Med Microbiol 2003;21:21-4. Available from: <http://www.ijmm.org/text.asp?2003/21/1/21/8310>

Symbol glossary: biomeddiagnostics.com/l/symbol-glossary

Document Revision History

Rev. NEW, March 2020

New document classified for veterinary use. Configured for formatting to a quad-fold presentation.



InTray® Dermatophyte

Enriched Dermatophyte Medium

REF

12-593-001

Σ

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REF

12-593-002

Σ

20

Not available in all countries; please inquire.

A Selective Culture System for the Identification of Dermatophytic Fungi

For Veterinary Use Only



Download



Certificate
of Analysis

Intended Use

InTray® Dermatophyte is an enriched dermatophyte medium used to aid in the detection of dermatophytes from animal specimens with mixed microbiota.

Description and Principle

Dermatophytes are fungi in the genera *Microsporum*, *Trichophyton* and *Epidermophyton*. They are capable of metabolizing keratin found in skin, hair and nails of living hosts. The fungi characteristically may invade the cutaneous tissue of the living host but rarely penetrate the subcutaneous tissue.

Tinea and ringworm are two terms commonly used to describe dermatophytes.

InTray Dermatophyte is formulated to produce a red color in the presence of growing dermatophytes. Moreover, the medium is formulated to produce distinctive colony growth with typical identifying characteristics both macro- and microscopically. The medium inhibits most Gram-positive bacteria, Gram-negative bacteria, yeast and saprophytic fungi. It is a single exposure system with dynamic built-in components and features that are designed for user compatibility and ease of detection.

Reagents and Appearance

This product appears transparent with a yellow hue and contains soytone, carbohydrate, growth stimulants, antimicrobial agents including: cycloheximide, color indicator and agar in distilled water. The final pH of the media is 5.6 ± 0.1 at 25°C.

Precautions, Safety and Disposal

For Veterinary Use Only.

Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing and gloves.

Do not use if package is damaged.

Once the tray has been inoculated and resealed, re-open only in a biological safety cabinet. Because of the potential for containing infectious materials, the tray must be destroyed by autoclaving at 121°C for 20 minutes.

Storage

Upon receipt, store InTray Dermatophyte at 18-25°C. Avoid refrigeration, freezing or prolonged storage at temperatures greater than 40°C. Do not use an InTray Dermatophyte if the medium shows signs of deterioration or contamination.

Shelf Life

InTray Dermatophyte expires 27 months from the date of manufacture.



Manufactured by:

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Procedure

Key notes regarding specimen collection: Specimen collection poses a major uncertainty in using this device.

NAILS - Often collecting viable material from infected nails is difficult because the living organisms are well under the nail itself. For best results, cut nails into small pieces.

HAIR - Samples should be grasped at the uninfected end and several (3-6) small pieces, about 2 cm long, should be cut from the infected portion for inoculation onto the medium.

SKIN - Scrapings should be taken with an inoculation tool that has been moistened with the medium or a sharp blade from the outer ridge of an active lesion. Vesicular fluid is unacceptable for dermatophyte culture. If vesiculated, skin scrapings should be taken from the surface

Materials Provided

- InTray Dermatophyte

Prepare Sample:

Use aseptic technique during specimen collection and handling. Remove any soap residue from the sampling area. Clean the area with 70% alcohol and permit to air dry.

1 Prepare InTray



Immediately label the tray with animal/sample information and date. Pull back the lower right corner adjacent to the clear window of the tray label until the protective seal is completely visible.

Remove the seal by pulling the tab. Discard the seal.

Do not remove or alter the white filter strip over the vent hole!

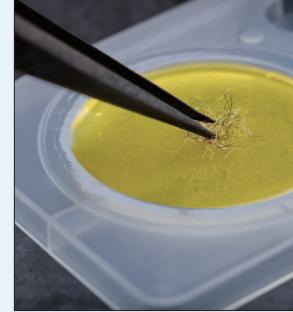
Materials Required but Not Provided

- Sterile inoculation tool (e.g., cotton swab/forceps/scalpel blade)
- Laboratory incubator capable of incubation at 18-30°C

Collect Sample:

InTray Dermatophyte is designed for culturing hair, skin and nail samples (i.e., cuttings/scrapings). All specimens should be handled according to CDC infectious materials isolation guidelines: cdc.gov/infectioncontrol/guidelines/isolation

2 Inoculate Sample



Inoculate the specimen (hair, nail, or skin scrapings) on the surface of the medium.

Re-seal all around the tray to ensure a complete seal by pressing the edges of the label against the plastic tray.

Do not cover the viewing window.

Complete re-seal prevents dehydration!

Incubation

Incubate inoculated trays for up to 14 days at 18-30°C, in the dark. Observe the trays daily for color changes, through the clear viewing window.

Quality Control

This product has been tested and meets the CLSI (formerly NCCLS) Approved Standard for commercially prepared media (M22-A3). At the time of manufacture, quality control testing is performed on each lot of the InTray Dermatophyte. The ability of the media to support growth and demonstrate expected biochemical reactions and morphology is verified by lot. Refer to the COA for lot-specific information.

Recommended strains for QC testing of InTray Dermatophyte

Test Strain	ATCC®	Expected Result
<i>T. mentagrophytes</i>	9533	Growth
<i>T. rubrum</i>	28188	Growth
<i>M. gypseum</i>	14683	Growth
<i>A. brasiliensis</i>	16404	Significant Inhibition
<i>S. aureus</i>	25923	Significant Inhibition
<i>E. coli</i>	25922	Significant Inhibition
<i>C. albicans</i>	60193	Significant Inhibition

Reading the Results

Evaluation

Observe the medium for growth and color change. Without opening the InTray Dermatophyte, place the unopened tray under a microscope lens to view the organisms using the 10x objective (100x power) to view distinct fungal structures (i.e. hyphae, micro/macro-conidia). Trays to be used with 10x objective ONLY! Staining is not required. See the Identification Chart below.

Mixed Growth: Dermatophytes and saprophytes (contaminants) will grow on the same tray. The dermatophytes will start to grow first and will turn the media red around the colony. The saprophytes will grow but there will be no color change around the colony until the colony matures. The colony growth color will change from white to yellow, black, brown, or green.

Positives: If, within 1-14 days, the medium color changes to red at the location of the specimen and whitish colonies grow, the InTray Dermatophyte is presumptive positive.

Negatives: Trays that show no colony growth or color change 14 days after inoculation are presumptive negative.

Saprophyte (Contaminants) Identification



Alternaria sp. Hyphae are septate and dark. Conidiophores are septate, variable in length and sometimes branched. Macroconidia are large (7-10 by 23-24 µm), brown, have both transverse and longitudinal stiations, and found singly or in chains. They are usually round at the end nearest the conidiophore, producing a club-like shape. Day 10-14: Colony growth with no initial color change. Colony Morphology - Formation of grayish white, woolly colonies 10 to 14 days after inoculation, that later become greenish black/brown with a light border. It may eventually become covered by short grayish aerial hyphae. Reverse side is black. The medium will change to pink when the colony changes color.



Aspergillus sp. Microscopic morphology – Septate hyphae (2.5-8 µm in diameter); unbranched conidiophore arises from a specialized foot cell. The conidiophore is enlarged at the tip, forming a swollen vesicle completely or partially covered with flask-shaped phialides. The phialides produce chains of mostly round, sometimes rough conidia (2-5 µm in diameter). Day 10-14: Colony growth with no initial color change. Formation of white, cottony colonies 10 to 14 days after inoculation that later become yellow, green, black or brown. Reverse side is white, goldish, or brown. The medium will change to red when the colony changes color



Penicillium sp. Microscopic morphology – Septate hyphae (1.5-5 µm in diameter) with branched conidiophores that have secondary branches known as metulae. On the metulae, are flask-shaped phialides that bear unbranched chains of smooth or rough conidia (2.5-5 µm in diameter). The entire structure forms the characteristic "penicillus" or "brush" appearance. Day 10-14: Colony growth with no initial color change. Colony morphology – Surface is at first white, then becoming very powdery, bluish green with a white border. Some less common species differ in color. Reverse is usually white but may be red or brown. Dermatophyte medium will change to pink/red when the colony changes color.

Microsporum canis Septate hyphae. Macroconidia: (10-25 x 35-110 µm) numerous, long, spindle-shaped, rough, thick walls are apparent at the knob-like ends. Microconidia: few in number, smooth and club-shaped.

Microsporum gypseum Septate hyphae. Macroconidia: (8-16 x 22-60 µm) large numbers, symmetrical, rough and relatively thin-walled with rounded ends, not pointed like *M. canis*. Microconidia: usually present, club-shaped.