

# DERMATOPHYTE TEST MEDIUM (DTM)

## INTENDED USE

Remel Dermatophyte Test Medium (DTM) is a solid medium recommended for use in qualitative procedures for selective isolation of pathogenic fungi (dermatophytes) from cutaneous sources.

## SUMMARY AND EXPLANATION

The dermatophytes are fungi that possess keratinolytic properties that enable them to invade skin, nails, and hair.<sup>1</sup> The infections caused by these organisms are commonly referred to as ringworm and are classified by the Latin word *tinea* followed by the area of the body infected.<sup>2</sup> Dermatophyte Test Medium (DTM) was formulated by Taplin et al. for use in locations where specialized training and microscopic examination is not available.<sup>3</sup> A pH indicator and three antimicrobial agents are incorporated into the agar to provide a differential and selective medium for isolation of dermatophytes belonging to the genera *Microsporum*, *Trichophyton*, or *Epidermophyton*.

## PRINCIPLE

Soy peptone supplies the nitrogen and carbon compounds necessary for the growth of microorganisms. Dextrose is an energy source. Phenol red is a pH indicator which detects alkaline metabolites produced by dermatophytes, resulting in a red color development of the medium. Cycloheximide is a selective agent which inhibits the growth of most saprophytic fungi. Chloramphenicol and gentamicin are also selective agents which may be added to inhibit many bacteria, including some *Pseudomonas* spp.

## REAGENTS (CLASSICAL FORMULA)\*

Dextrose.....	10.0 g	Phenol Red.....	0.2 g
Soy Peptone.....	10.0 g	Agar.....	20.0 g
Cycloheximide.....	0.5 g	Demineralized Water.....	1000.0 ml

pH 5.5 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PRECAUTIONS

This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

## PREPARATION OF DEHYDRATED CULTURE MEDIUM

1. Suspend 40.5 g of medium in 1000 ml of demineralized water.
2. Heat to boiling with agitation to completely dissolve.
3. Sterilize by autoclaving at 121°C for 15 minutes or following established laboratory procedures.
4. Cool medium to 45-50°C and add gentamicin sulfate and chloramphenicol (0.1 g of each per liter).
5. Dispense into appropriate containers.

## PROCEDURE

1. Consult current editions of appropriate references for the recommended procedure for sample preparation, inoculation, testing, and interpretation.

## QUALITY CONTROL

Each lot number of Dermatophyte Test Medium (DTM) has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

### CONTROL

*Candida albicans* ATCC® 10231  
*Trichophyton mentagrophytes* ATCC® 9533  
*Aspergillus brasiliensis* ATCC® 16404  
*Cryptococcus neoformans* ATCC® 34877  
*Escherichia coli* ATCC® 25922  
*Pseudomonas aeruginosa* ATCC® 27853  
*Staphylococcus aureus* ATCC® 25923

### INCUBATION

Ambient, up to 72 h @ 25-30°C  
Ambient, up to 72 h @ 25-30°C

### RESULTS

Good growth  
Good growth, red zone  
Inhibition (partial to complete)  
Inhibition (partial to complete)  
Inhibition (partial to complete)  
Inhibition (partial to complete)  
Inhibition (partial to complete)

## LIMITATIONS

1. DTM is primarily used as a screening test for detection of dermatophytes. Additional testing may be required for definitive identification.<sup>2</sup>
2. Specimens from heavily soil-contaminated sources (e.g., feet and nails) may contain saprophytic fungi which redden the medium. Such cultures may require additional interpretation to distinguish contaminating fungi from dermatophytes.<sup>3,5</sup>
3. Organisms other than dermatophytes (e.g., saprophytic fungi, yeast, and bacteria) may grow on DTM and produce alkaline metabolites. DTM should not be used as the only method for identification of dermatophytes.<sup>2,3</sup>

## BIBLIOGRAPHY

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3. Taplin, D., N. Zaias, G. Rebell, and H. Blank. 1969. *Arch. Dermatol.* 99:203-209.
4. Miller, J.M. 1999. *A Guide to Specimen Management in Clinical Microbiology*. 2<sup>nd</sup> ed. ASM Press, Washington, D.C.
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Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, sample collection, storage and transportation, materials required, quality control, and limitations.

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IFU 453202, Revised November 10, 2010

Printed in U.S.A.

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