PRODUCT SPECIFICATION SHEET

D.T.M. Agar Base (Dermatophyte Test Agar Base) (DM079)

Intended Use
D.T.M. Agar Base (Dermatophyte Test Agar Base) (DM079) is recommended for selective isolation of *dermatophytes*.

Product Summary and Explanation
The Dermatophytes are a distinct group of fungi that infect the hair, skin and nails of humans and animals producing a variety of cutaneous infections referred to as tinea or ringworm.[1-3] Members of the genera *Trichophyton*, *Microsporum* and *Epidermatophyton* are responsible for most of the cutaneous fungal infections.[4] In 1969, Taplin et al. developed this medium as a selective and differential medium for detection and identification of dermatophytes.[5] On this medium identification of Dermatophytes are based on morphology and alkaline metabolites production. A combination of three antimicrobial agents (cycloheximide, chlortetracycline and gentamicin) inhibits bacteria and saprophytic yeasts and moulds. . Lack of availability of chlortetracycline in late 1992 resulted in the substitution of chloramphenicol for chlortetracycline.[5] Dermatophytes are presumptively identified based on gross morphology and the production of alkaline metabolites, which raise the pH and cause the phenol red indicator to change the color of the medium from yellow to pink to red.[2, 4, 6] Taplin et al.reported the medium (with chlortetracycline) to be 97 to 100% accurate for identifying dermatophytes.

Principles of the Procedure
Papaic digest of soyabean meal provides nitrogenous and carbonaceous substances essential for microbial growth. Glucose is the energy source for metabolism. The pH indicator, phenol red, is used to detect amine production. Cycloheximide inhibits most of the saprophytic fungi. The supplements, Gentamicin and Chlortetracycline, aid in selectivity of medium. Gentamicin inhibits gram-negative bacteria including *Pseudomonas* species, while chlortetracycline inhibits a wide range of gram-positive and gram-negative bacteria. The presence of growth on the medium provides presumptive identification of dermatophytes. D.T.M. Agar by means of the distinct colour change from yellow to red helps in isolation and early recognition of members of the *Microsporum*, *Trichophyton*.

Formula / Liter

Ingredients	Gms / Liter
Papaic digest of soyabean meal	10.00
Glucose	10.00
Phenol red	0.20
Agar	20.00
Final pH: 5.5 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions
1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions
1. Suspend 20.10 grams of the medium in 500 ml of distilled water.
2. Heat if necessary, to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Cool to 50°C. Aseptically add the rehydrated contents of one vial of Dermato Supplement (MS013).
5. Mix well and pour into sterile petri plates.

Quality Control Specifications

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Dehydrated Appearance	Light yellow to pink homogeneous free flowing powder
Prepared Medium	Orange red coloured, slightly opalescent gel forms in Petri plates
Reaction of 4.2% Solution	pH : 5.5 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 2.0% Agar gel

Expected Cultural Response: Cultural characteristics observed with added Dermato Supplement (MS013), after an incubation at 25-30°C for 6 days.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	*Aspergillus brasiliensis ATCC 16404*	none-poor	--
2.	*Candida albicans ATCC 10231*	good-luxuriant	--
3.	*Microsporum audouinii ATCC 9079*	good-luxuriant	pink-red
4.	*Pseudomonas aeruginosa ATCC 27853*	none-poor	--
5.	*Trichophyton mentagrophytes ATCC 9533*	good	pink-red

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Inoculate the specimen as soon as possible after it is received in the laboratory. Implant cutaneous specimens by gently pressing the samples into the agar surface.
2. For isolation of fungi from potentially contaminated specimens, a non-selective medium should be inoculated along with the selective medium.
3. Incubate plates at 25-30°C in an inverted position (agar side up) with increased humidity.
4. Refer to appropriate references for specific procedures.

Results

1. Rapidly growing species may effect a complete colour change within 3 days while slow growers will proportionately take longer time.
2. Examine medium at 24 hours for pH indicator change in medium, Dermatophytes produce typical morphology and a pink to red color in the medium around the colony within 3 – 6 days.
3. Certain strains of *Candida albicans* are capable of converting indicator to red, but yeasts can be recognized by their white bacteria-like colonial appearance.
4. Non-Dermatophytes can be recognized by the absence of colour change. Certain nondermatohyte fungi rarely can produce alkaline products (false-positive results). For definitive identification of isolates, inoculate onto conventional media.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. The complete classification of dermatophytes depends on microscopic observations of direct and slide culture preparation along with biochemical and serological tests.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging
Product Name : D.T.M. Agar Base (Dermatophyte Test Agar Base)
Product Code : DM079
Available Pack sizes : 100gm / 500gm

References

1. Forbes, Sahm and Weissfeld. 1994. Bailey & Scott's diagnostic microbiology, 10th ed. Mosby, Inc., St. Louis, Mo.
2. Kane and Summerbell. 1999. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
3. Kwon-Chung and Bennett. 1992. Medical mycology. Lea & Febiger, Philadelphia, Pa.
4. Isenberg and Garcia (ed.). 2004 (update, 2007). Clinical microbiology procedures handbook, 2nd ed. American Society for Microbiology, Washington, D.C.
5. Taplin, Zaias, Rebell and Blank. 1969. Arch. Dermatol. 99:203-209.
6. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.

Further Information

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