BD™ Mycosel™ Agar •
BD™ Sabouraud Agar with Chloramphenicol and Cycloheximide

INTENDED USE

BD Mycosel Agar and **BD Sabouraud Agar with Chloramphenicol and Cycloheximide** are highly selective media for the isolation of pathogenic fungi from materials having a large flora of other fungi and bacteria. They are not general purpose media for the isolation of all fungi (including molds and saprophytic yeasts).

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

BD Mycosel Agar is based on **Mycophil™ Agar**, a medium for the cultivation, demonstration of chromogenesis, and maintenance of fungi.[1]

BD Sabouraud Agar with Chloramphenicol and Cycloheximide is based on Sabouraud Glucose Agar, a general purpose medium devised by Sabouraud for the cultivation of dermatophytes.[2] The low pH of approximately 5.6 and the high glucose concentration is favorable for the growth of all fungi.[1,3]

BD Mycosel Agar and **BD Sabouraud Agar with Chloramphenicol and Cycloheximide** contain nutrients supplied by peptones. Glucose is an energy source.

Cycloheximide is used in a variety of media for the isolation of pathogenic fungi to inhibit certain non-pathogenic fungi like saprophytic moulds and yeasts. It is especially useful in the isolation of dermatophytes.[4] Since the pathogenicity of fungi and the immune status of patients vary, care should be taken when a medium with cycloheximide is used alone for the isolation of fungi because certain opportunistic fungi might be missed.[5,6]

Chloramphenicol is a broad-spectrum antibiotic which is inhibitory to a wide range of gram-negative and gram-positive bacteria but may have an inhibitory effect on several pathogenic fungi.[1]

BD Mycosel Agar and **BD Sabouraud Agar with Chloramphenicol and Cycloheximide** are very similar to each other in composition and selectivity, but the latter medium has a lower pH which might be advantageous for the isolation of acidotolerant fungi but might also be a disadvantage when fungi preferring a higher pH are to be isolated.

These media are used for the isolation of fungi from clinical specimens or materials suspected to contain bacterial and fungal contaminants.

REAGENTS

Formulas* Per Liter Purified Water

BD Mycosel Agar		**BD Sabouraud Agar with Chloramphenicol and Cycloheximide**	
Papaic Digest of Soybean Meal	10.0 g	Pancreatic Digest of Casein	5.0 g
Glucose	10.0	Peptic Digest of Animal Tissue	5.0
Cycloheximide	0.4	Glucose	40.0
Chloramphenicol	0.05	Chloramphenicol	0.05
Agar	15,5	Cycloheximide	0.4
pH	6.9 +/- 0.2	Agar	23.5
		pH	5.6 +/- 0.2

*Adjusted and/or supplemented as required to meet performance criteria.

PRECAUTIONS

IVD . For professional use only.

Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

Consult **GENERAL INSTRUCTIONS FOR USE** document for aseptic handling procedures, biohazards, and disposal of used product.

STORAGE AND SHELF LIFE

On receipt, store plates in the dark at 2 to 8° C, in their original sleeve wrapping until just prior to use. Avoid freezing and overheating. The plates may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.
Plates from opened stacks of 10 plates can be used for one week when stored in a clean area at 2 to 8° C.

USER QUALITY CONTROL

Inoculate representative samples with the following strains (for details, see **GENERAL INSTRUCTIONS FOR USE** document). See footnote for incubation.

Strains	**BD Mycosel Agar**	**BD Sabouraud Agar with Chloramphenicol and Cycloheximide**
**Candida albicans* ATCC™ 10231	Good to excellent growth	Good to excellent growth
****Trichophyton mentagrophytes* ATCC 9533	Good to excellent growth	Good to excellent growth
***Aspergillus niger* ATCC 16404	Inhibition partial to complete	Inhibition partial to complete
***Saccharomyces cerevisiae* DSM 1333	Inhibition complete	Inhibition complete
**Escherichia coli* ATCC 25922	Inhibition complete	Inhibition complete
**Staphylococcus aureus* 25923	Inhibition complete	Inhibition complete

Incubation: *48 h / **3 to 4 days / ***5 to 7 days, 25°C - 28°C, aerobically

PROCEDURE

Materials Provided

BD Mycosel Agar or **BD Sabouraud Agar with Chloramphenicol and Cycloheximide**, supplied in 90 mm **Stacker**™ plates. Microbiologically controlled.

Materials Not Provided

Ancillary culture media, reagents and laboratory equipment as required.

Specimen Types

The products described in this document are isolation media for pathogenic fungi, especially but not only from dermatological specimens (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**).

Test Procedure

Streak the specimen as soon as possible after it is received in the laboratory onto **BD Mycosel Agar** or **BD Sabouraud Agar with Chloramphenicol and Cycloheximide**. The streak plate is used primarily to isolate pure cultures from specimens containing mixed flora. Alternatively, if material is being cultured directly from a swab, roll the swab over a small area of the surface at the edge; then streak from this inoculated area.

- If the specimen consists of skin scrapings, hairs, or nails, place the material in the center of the media surface. If possible, larger particles should be slightly pressed onto the surface by means of sterile forceps to provide contact with the medium.
- For isolation of fungi causing systemic mycoses, two sets of media should be inoculated, with one set incubated at 25 to 30°C and a duplicate at 35 to 37° C.
- It is recommended to include a plate of **BD Sabouraud Glucose Agar** to provide an indication of all fungal pathogens present in the specimen.

- Eventually, a nonselective medium such as Columbia Agar with 5% Sheep Blood must also be inoculated to provide an indication of bacterial pathogens present in the specimen.

If used for the detection of yeasts (e.g., *Candida* species) in clinical specimens, incubate for 48 hours at 30 to 35° C. If filamentous fungi, including dermatophytes are suspected, incubate for up to one week at 25 to 30° C. Dermatophytes occasionally need 3 weeks or longer to produce growth. If incubation is longer than 3 days, provide adequate moisture. Plates may be sealed with adhesive plastic tape to avoid desiccation.

Results
After sufficient incubation, the plates may show isolated colonies in streaked areas and confluent growth in areas of heavy inoculation.
Examine plates for fungal colonies exhibiting typical colour and morphology. Biochemical tests and microscopical and serological procedures should be performed to confirm findings. [4-7]

Since the number of fungi is large, no details on their appearance are given here. Consult the references.[3-9]

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

These media are used to isolate pathogenic fungi from specimens with a high flora contamination. Due to the long incubation needed for the isolation of dermatophytes (which allows breakthrough growth of undesired contaminants on less selective media), they are especially helpful in isolating fungi from skin infections, such as *Trichophyton* and *Microsporum* species and many others. They may also be used for the isolation of *Candida albicans* and several other *Candida* species.
Some pathogenic fungi may be inhibited by the antimicrobials of this medium. Therefore, **BD Sabouraud Glucose Agar** should also be inoculated if media containing chloramphenicol and/or cycloheximide are used.
Moulds (e.g., *Aspergillus* spp.) and a variety of yeast species are often considered nonpathogenic, but may occasionally cause infections, especially in immunocompromized and several ill patients. Usually, these fungi do not grow on media containing cycloheximide. Therefore, fungal media without this inhibitor must be included.
Due to the wide growth temperature range of fungi, it may be necessary to inoculate several plates and incubate them at different temperatures. Consult the **Test Procedure** section and appropriate references.[5-9]
Nocardia and *Actinomyces* are filamentous bacteria (no fungi!) and, therefore, do not grow on Sabouraud media containing bacterial inhibitors like chloramphenicol.

REFERENCES

1. MacFaddin, J.F. 1985. Media for isolation-cultivation- identification-maintenance of medical bacteria. vol. I. Williams & Wilkins, Baltimore.
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6. Summerbell, R.C. 2003. *Trichophyton*, *Microsporum*, *Epidermophyton*, and agents of superficial mycoses. *In:* Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Yolken (ed.). Manual of clinical microbiology, 8thed. American Society for Microbiology, Washington, D.C.

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9. Fromtling, R.A. 1995. Mycology. *In*: P.R. Murray, E.J. Baron, M.A. Pfaller, F.C. Tenover, and R.H. Yolken (ed.), Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.

PACKAGING/AVAILABILITY

BD Mycosel Agar
Cat. No. 254417 Ready-to-use plated media, 20 plates

BD Sabouraud Agar with Chloramphenicol and Cycloheximide
Cat. No. 255504 Ready-to-use plated media, 20 plates

FURTHER INFORMATION

For further information please contact your local BD representative.

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