SABOURAUD DEXTROSE AGAR

AGDS-0EP-500

- **Principle**

Sabouraud Dextrose Agar can be used for cultivating yeasts, moulds (as cultivating pathogenic fungi, particularly those associated with skin infections) and aciduric microorganisms. This medium is also used for determining the microbial and fungal content of cosmetics and for the mycological evaluation of food.

The formula is based on the European Pharmacopoeia. Dextrose is the fermentable carbohydrate providing carbon and energy. Peptone mixture provides nitrogen, vitamins, minerals and amino acids essential for growth. Bacteriological agar is the solidifying agent. The high dextrose concentration and acidic pH make this medium selective for fungi.

Georg et al. demonstrated that the basic agar fortified by three antibiotics considerably improves the isolation of pathogenic fungi from heavily contaminated sources. To prepare a selective culture medium aseptically add the following for every litre of the medium before use: 0,4 g Cycloheximide; 20 units Penicillin; 40 mg Streptomycin.

One can obtain a very rich Sabouraud medium by dissolving the medium in one litre of Heart Infusion (Cat. 1714). The European Pharmacopoeia recommends this medium in the paragraph 2.6.12: “Microbiological examination of non-sterile products: Microbial enumeration test” for the examination of TYMC in products. In the paragraph 2.6.13: "Microbiological examination of non-sterile products: Test for specified microorganisms" for the test of Candida albicans in products.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
Dextrose	40.00
Bacteriological agar	15.00
Mixture of peptic digest of animal tissue and pancreatic digest of casein (1:1)	10.00

- **Preparation**

Suspend 65 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Distribute in proper containers and sterilize in autoclave at 118-121 °C for 15 minutes. AVOID OVEARHEATING as it facilitates the hydrolysis of the components and the medium remains soft.

- **Applications and use**

For clinical diagnosis, the type of samples is all kind of samples (hair, skin, nails, etc). If the samples are formed by scrapes of skin, hair or nails, place

- Spread a plate with loop or swab
- Incubate in aerobic conditions at 30±2 °C for 18-48 hours and until 7 days if necessary.
- Reading and interpretation of results.

For other uses not covered by the CE marking, according to European Pharmacopoeia for the examination of TYMC in products:

Membrane filtration:
- Prepare the sample.
- Transfer the appropriate amount of the sample to a membrane filter.
- Place the membrane to the surface of Sabouraud Dextrose Agar.
- Incubate the plate of Sabouraud Dextrose Agar at 20-25 °C for 5-7 days.

Plate-count methods:
- Prepare the sample.
- Inoculate the plates of Sabouraud Dextrose Agar conforming to the pour-plate method or the surface-spread method.
- Incubate the plates of Sabouraud Dextrose Agar at 20-25 °C for 5-7 days.
- Select the plates corresponding to a given dilution and showing the highest number of colonies less than 50.

For other uses not covered by the CE marking, according to European Pharmacopoeia for the test of Candida albicans in products:

- Prepare the product to be examined and use 10 mL or the quantity corresponding to not less than 1 g or 1 mL to inoculate 100 mL of Sabouraud.

Dextrose Broth.
- Incubate at 30-35 °C for 3-5 days.
- Subculture on a plate of Sabouraud Dextrose Agar.
- Incubate at 30-35 °C for 24-48 hours.
- Growth of white colonies may indicate the presence of *C. albicans*. Confirm by identification tests.
- The product complies with the test if such colonies are not present or if the confirmatory tests are negative.

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Beige
Colour of the prepared medium	Amber slightly opalescent
Final pH (25 °C)	5.6 ± 0.1

- **Microbiological test**

According to European Pharmacopoeia; *Aspergillus brasiliensis* and *Candida albicans*:

Incubation conditions: 20-25 °C /≤5 days.

Inoculation conditions: ≤100 CFU.

Rest of strains: Incubation conditions: 30 °C / 3-7 days.

According to ISO 11133: Reference media: Media batch SDA already validated.

Microorganisms	ATCC	Specification	Characteristic reaction
Candida albicans	10231	Good growth	White colonies
Aspergillus brasiliensis	16404	Good growth	White mycelium, black spores
Escherichia coli	25922	Moderate-good growth	-
Escherichia coli	8739	Moderate-good growth	-
Lactobacillus rhamnosus	9595	Good growth	-
Saccharomyces cerevisiae	9763	Good growth	Cream domed colonies

- **Storage**

The product is highly hygroscopic; keep the container always closed and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

Sabouraud, Ann. Dermat and Syphilol 1892-3. Gerog J. Lab. CLin. Med. 67;355 1953.

Murray, P.R., E.J baron, M.A. Pfaller, E.C. Tenover, and R.H. YOLKEN (ed.) 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.

Beuchat, L.R., J.E Corry, A.D King, Jr. and J.I Pitt (ed) 1986 Methods for the mycological examination of food. Plenum Pres, New York. European Pharmacopoeia. 9.3

ISO 16212: 2017 Cosmetics. Microbiology. Enumeration of yeast and molds.

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.