ARENA BioScien

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Agar Agar

A solidifying agent used in preparing microbiological culture media in a laboratory setting

REF: BS.1/AG01.100.0100	100 Gram	REF: BS.1/AG01.250.0250	250 Gram
REF: BS.1/AG01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Agar is used as a gelling agent medium for different types of culture media, auxotrophic studies, bacterial and yeast transformation studies and bacterial genetics applications.

METHOD PRINCIPLE

Agar, or agar-agar, is a jelly-like ingredient which consists of polysaccharides obtained from the cell walls of some species of red algae. Agar is composed of a mixture of two components, the linear polysaccharide agarose and a heterogeneous mixture of smaller molecules called agaropectin. Agar became the superior gelling agent of choice over gelatin, due to the fact that agar remains firm at growth temperatures for many pathogens. Agar is generally resistant to a breakdown by bacterial enzymes. The use of agar in microbiological media significantly contributed to the improvement of microbiology.

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Agar Agar material safety data sheet.

STORAGE AND STABILITY

BioScien Agar Agar should be stored between 10-30°C in a firmly closed container and most prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH is 6.5-7.5 at 25°C

PREPARATION

Agar is used in culture media in following concentrations: For Routine Media: 1.4 to 1.6%, For Soft Media: 0.5%, For Semi-solid Media: 0.15%, For Media with Reduced Oxygen Tension: 0.05 - 0.1%, For Extra Hard Gels, for inhibiting swarming of Proteus species: 2.5% - 3.0%. If the culture medium has a pH <5.0 the working strength should be 2% (2g /100ml). Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Deterioration

The color of ***BioScien*** Agar Agar is a creamy colored powder. Prepared Media is slightly pale to hazy in appearance. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

EQUIPMENTS REQUIRED NOT PROVIDED

- Sterile Petri dishes or test tubes
- Incubator
- Autoclave

QUALITY CONTROL

Dehydrated Appearance: Creamy Colored

Prepared Appearance: Slightly pale to hazy in appearance

Solubility: Soluble in hot water at temperatures above 85°C. While being insoluble in cold water.

Working Strength: 1-1.6%

Clarity: solidified agar is normally clear at 1.5% concentration at 38-40°C

Melting Point: >85°C

Gelling Temperature: 38-40°C

Ash: ≤ 6.5%

Moisture: ≤ 15%

Expected Culture Response On Nutrient Agar:

Microorganisms	Growth
Escherichia coli ATCC 25922	luxuriant
Pseudomonas aeruginosa ATCC 27853	luxuriant
Staphylococcus aureus ATCC 25923	luxuriant
Salmonella Typhi ATCC 6539	luxuriant
Streptococcus pyogenes ATCC 19615	luxuriant

REFERENCES

1. United States Pharmacopeia National Formulary 2018: USP 41 NF 35
2. Chapters 61, 62, 111. The United States Pharmacopeial Convention, Rockville, MD.
3. Hesse, W. 1894. Uber die quantitative Bestimmung der in der Luft enthaltenen Mikroorganismen. Mit. a.d. Kaiserl. Gesh. Berlin. 2: 182-207.
4. Hitchens, A. P., and M. C. Leiking. 1939. The introduction of agar-agar into bacteriology. J. Bacteriol. 37:485-493.
5. Selby, H. H., and T. A. Selby. 1959. Agar. In Whister (ed.). Industrial gums, Academic Press Inc., New York, N. Y.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number	⚠	Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		