

Dextrose Starch Agar

Dextrose Starch Agar is used for propagating pure cultures of *Neisseria gonorrhoeae* and other fastidious organisms.

REF: BS.1/DH01.100.0100	100 Gram	REF: BS.1/DH01.250.0250	250 Gram
REF: BS.1/DH01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Neisseria is a large group of gram-negative proteobacteria. *Neisseria meningitidis*, the causative agent of meningitis, is responsible for a large amount of morbidity and mortality throughout the world while *Neisseria gonorrhoeae* is the causative agent of the sexually transmitted disease gonorrhea that is second in cases reported only to chlamydia (CDC). These fastidious organisms can be cultivated on Dextrose Starch Agar. The medium is highly nutritious and supports the luxuriant growth of various fastidious organisms like *N. meningitidis*, *Streptococcus pyogenes* and *Streptococcus pneumoniae* without the need of supplementation with additives. Organisms lacking the ability of starch hydrolysis can be maintained on this medium. However when used as a stock culture agar for maintenance, the medium should be taken in half concentrations. Organism capable of hydrolyzing starch will create acidic conditions thereby making it unsuitable for maintenance. Dextrose Starch Agar was used to test the activity of various antibiotics against *Neisseria* species by the agar dilution technique as demonstrated by Wilkins, Lewis and Barbiers (1). *N. meningitidis* grow luxuriantly on this medium, when the plates are kept in 4-6% CO₂ environment or in the presence of abundant moisture. Swancara (2) has described a method of obtaining partial carbondioxide tension and this can be used for incubation of Dextrose Starch Agar plates inoculated with *N. meningitidis*.

Dextrose Starch Agar prepared in half strength is a good medium for maintaining stock cultures of gonococci. The medium normally contains a flocculent precipitate, which does not affect the nutritive value of the medium. It is necessary to have the incubation atmosphere saturated with moisture while cultivating gonococci. Suitable conditions can be achieved, if the plates are incubated in a closed container containing cotton or towel saturated with water. Best results are obtained on a solid medium with a moist surface.

METHOD PRINCIPLE

Proteose peptone and gelatin serve as sources of nitrogen and carbon essential for microbial growth. Dextrose serves as the energy source. Starch neutralizes toxic fatty acids that may be present in the agar. Sodium chloride maintains the osmotic balance and buffering is achieved by inclusion of disodium phosphate.

MEDIA COMPOSITION

Item	Formula in g/L
Proteose peptone	15
Dextrose	2
Starch, soluble	10
Sodium chloride	5
Dipotassium phosphate	3
Gelatin	20
Agar	10

pH 7.3 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated people. 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.
 - Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices should be decontaminated according to 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 Dextrose Starch Agar material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

STORAGE AND STABILITY

BioScien Dextrose Starch Agar

should be stored between 10-30°C in a firmly closed container and the 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 the stated expiry period.

PROCEDURE

Suspend 30 grams in 1000 ml distilled water.

Heat to boiling to dissolve the medium completely.

Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Deterioration

BioScien Dextrose Starch Agar

is Cream to yellow homogeneous free flowing powder. Prepared medium is Light amber coloured, opalescent gel with flocculent precipitate forms in tubes as slants. should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11,12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10,13). After use, contaminated materials must be sterilized by autoclaving before discarding.

TYPE OF SPECIMEN

Clinical samples

Food and Dairy samples
Environmental samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes
- Autoclave
- Incubator

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

PERFORMANCE CHARACTERISTICS

The following organisms are used by us as part of the quality assurance of the product. The total inoculum challenge for each test organism per bottle is 10 to 50 colony forming units (CFU's).

Test Organisms	Growth	Starch hydrolysis
Bacillus subtilis subsp. spizizenii ATCC 6633	Luxuriant	positive reaction ,clearing around the colony
Escherichia coli ATCC 25922	Luxuriant	negative reaction
Staphylococcus aureus subsp. aureus ATCC 25923	Luxuriant	negative reaction
Streptococcus pyogenes ATCC 19615	Luxuriant	negative reaction

REFERENCES

1. Wilkins, Lewis and Barbiers, 1956, Antibiot. Chemother., 6:149.
2. Swancara, 1948, Am. J. Med. Tech., 14:214.

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