ARENA BioScien

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SS AGAR

Medical laboratories media recommended for differential and selective isolation of Salmonella and Shigella species from pathological specimens, suspected foodstuffs etc.

REF: BS.1/SS01.100.0100	100 Gram	REF: BS.1/SS01.250.01250	250 Gram
REF: BS.1/SS01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Salmonella-Shigella (SS) agar is a selective and differential medium. It is used for the isolation, cultivation and differentiation of gram-negative enteric microorganisms isolated from both clinical and non-clinical specimens such as from feces, urine, and suspected food items (fresh and canned foods). This medium is not recommended for the primary isolation of Shigella as some of Shigella strains may not grow on SS agar due to relatively high level of selectivity.

METHOD PRINCIPLE

The presence of bile salts mixture and dyes (brilliant green) inhibits the growth of gram-positive species to a varying degree. Differentiation of enteric organisms is achieved by the incorporation of lactose in the medium. Organisms which ferment lactose produce acid which, in the presence of the neutral red indicator, results in the formation of red/pink colonies. Lactose non-fermenters form colorless colonies. The latter group contains the majority of the intestinal pathogens, including Salmonella and Shigella.
The sodium thiosulfate and ferric citrate enable the detection of hydrogen sulfide production as evidenced by colonies with black centers.

MEDIA COMPOSITION

Item	Concentration g/l
Peptone	5.000
HM peptone B #	5.000
Lactose	10.000
Bile salts mixture	8.500
Sodium citrate	10.000
Sodium thiosulphate	8.500
Ferric citrate	1.000
Brilliant green	0.00033
Neutral red	0.025
Agar	15.000
Final pH (at 25°C)	7.0±0.2

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 SS agar material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

BioScien SS Agar media are stable until expiration date stated on label when properly stored 10-30°C. SS Agar media is prepared by suspend 63 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Don't autoclave or overheat. Cool to about 50°C, mix and pour into sterile Petri dishes.

Final pH 7.0 ± 0.2 at 25°C

Deterioration
The color of ***BioScien*** SS Agar medium is cream to yellow homogeneous free flowing powder, dehydrated medium is clear light amber coloured to slightly opalescent gel. After addition of 5% v/v sterile defibrinated blood it turn to cherry red coloured, opaque gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium..

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines.

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines.

After use, contaminated materials must be sterilized by autoclaving before discarding.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator
- Autoclave

CHARACTERISTICS OF THE COLONIES

After the incubation period examine plates for organisms of interest. When examining primary plates a hand lens or stereoscopic microscope should be available for examining very small colonies. The different types of colonial morphology appearing on the agar plate should be noted as well as the number of each morphotype present.

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 ***BioScien*** technical support.

SS Agar	Expected results
Escherichia coli ATCC 25922	pink with bile precipitate
Enterobacter aerogenes ATCC 13048	cream pink
Enterococcus faecalis ATCC 29212	colourless
Proteus mirabilis ATCC 25933	colourless, may have black centre
Salmonella choleraesuis ATCC 12011	colourless with black centre
Salmonella Typhi ATCC 6539	colourless with black centre
Salmonella Typhimurium ATCC 14028	colourless with black centre
Salmonella Enteritidis ATCC 13076	colourless with black centre
Shigella flexneri ATCC 12022	colourless

PERFORMANCE CHARACTERISTICS [4]

Performance of the medium from type cultures after incubation at a temperature of 35 ± 2°C, under 5 - 10% CO2, and observed after 24 - 72 hours. (It is recommended to grow Aspergillus brasiliensis and Saccharomyces cerevisiae aerobically at 30 ± 2°C).

Test Organisms	Growth
Escherichia coli ATCC 25922	fair
Enterococcus faecalis ATCC 29212	None-poor
Salmonella choleraesuis ATCC 12011	good-luxuriant
Shigella flexneri ATCC 12022	Good
Salmonella Typhimurium ATCC 14028	good-luxuriant

REFERENCES

1. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
2. Eaton A. D., Clesceri L. S., Rice E. W., and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
3. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
4. Lennette and others (Eds.), 1985, Manual of Clinical Microbiology, 4th ed., ASM, Washington, D.C.

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	

EC REP

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CE