Product Insert

BOTULISM SELECTIVE MEDIUM (BSM)

Products

AS-223 Botulism Selective Medium (BSM) 4 plates / pkg

Intended Use

Botulism Selective Medium (BSM) is a selective and differential medium for the presumptive identification of *Clostridium botulinum* from food or clinical samples.

Summary

BSM agar is a selective and differential media used for the presumptive identification of *Clostridium botulinum* from food or clinical samples. BSM contains cycloserine, sulfamethoxazole, and trimethoprim as selective inhibitory agents. A suspension of egg yolk is added for the detection of lecithinase, lipase, and proteolytic activity. The degradation of lecithin in the egg yolk results in an opaque precipitate around the colonies. Lipase destroys the fats within the egg yolk, which results in an iridescent sheen on the colony surface. Proteolytic activity is indicated by a clearing of the medium around the colonies. This medium is dispensed under oxygen-free conditions to prevent the formation of oxidized products prior to use.

Formulation*

Beef Heart Infusion	10.00	g
Tryptose	10.00	g
Sodium Chloride	5.00	g
Cycloserine	0.25	g
Sulfamethoxazole	0.076	g
Trimethoprim	0.06	g
Thymidine Phosphorylase	0.10	mL
Egg Yolk Suspension	40.00	mL
Agar	20.00	g
DI Water	1.00	L

Final pH: 7.4 ± 0.3 at 25 °C
Final weight: 17.0 g ± 1.7 g

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

Precautions

For *IN VITRO DIAGNOSTIC USE* only. Utilize approved biohazard precautions and aseptic technique when using this product. This product is for use by properly trained and qualified personnel only. Sterilize all biohazard waste prior to disposal.

Storage and Shelf Life

Storage: Upon receipt, store at room temperature in original package until used. Avoid overheating or freezing. Do not use media if there are signs of deterioration (shrinking, cracking, or discoloration due to oxidation of media) or contamination. The expiration date applies to the product in its original packaging and stored as directed. Do not use product past the expiration date shown on the label.

Shelf Life: 90 days from date of manufacture.

Procedure

Specimen Collection: Protect specimens for anaerobic culture from oxygen during collection, transportation, and processing. Consult appropriate references for detailed instructions concerning collection and transportation of anaerobes.

Methods for Use: BSM agar should be inoculated directly with clinical specimen or from a broth that has been inoculated with a clinical specimen. Streak plates with inoculum to obtain isolated colonies and immediately place into an anaerobic atmosphere, incubating at 35-37°C for 18-48 hours. Extended periods of incubation may be required to recover slower growing anaerobes. Extended incubation time may also result in loss of selectivity of the media which can result in the overgrowth of organisms that should be inhibited. Detailed instructions for processing anaerobic cultures can be found in the listed references.

Materials Required, But Not Provided

Standard microbiological supplies and equipment such as loops, saline blanks, slides, staining supplies, microscope, incinerator / autoclave, incubators, anaerobic chamber / anaerobic jars, disinfectant, other culture media, and serological / biochemical reagents may be required.

Interpretation of Results

BSM supports good growth of *Clostridium botulinum* from food or clinical specimens. This medium supports the typical lecithinase and lipase reactions produced by some Clostridia species. Degradation of lecithin in the egg yolk, from lecithinase positive organisms, results in an opaque precipitate surrounding the colonies. Destruction of the fats within the egg yolk, from lipase positive organisms, results in an iridescent sheen on the colony surface.

Limitations

BSM will not provide complete information for identification of bacterial isolates. Additional test procedures and media are required for complete identification. It is recommended that a non-selective media, such as Brucella Blood Agar (BRU, Cat. #: AS-111) also be inoculated from the same clinical specimen to assure recovery of all species present. Consult reference materials for additional information.

Quality Control

The following organisms are routinely used for quality assurance testing at Anaerobe Systems.

Organism Tested	ATCC #	Results	Time	Special Reaction
Bacteroides fragilis	25285	No Growth		
Prevotella melaninogenica	25845	Inhibited		
Fusobacterium necrophorum	25286	No Growth		
Fusobacterium nucleatum	25586	No Growth		
Clostridium perfringens	13124	Inhibited		Lecithinase reaction
Clostridioides difficile	9689	Inhibited		
Clostridium novyi	7659	No Growth		
Clostridium sporogenes	3584	Growth	24 – 48 hours	Lipase reaction
Cutibacterium acnes	6919	No Growth		
Peptostreptococcus anaerobius	28337	No Growth		
Escherichia coli	25922	No Growth		
Staphylococcus aureus	25923	No Growth		

User Quality Control: The final determination to the extent and quantity of user laboratory quality control must be determined by the end user.

If sterility testing is to be performed on this product, a representative sample of the lot(s) should be incubated anaerobically and aerobically for 48 – 96 hours.

If the nutritive/inhibitory capacity of this medium is to be tested for performance, it is recommended that the following ATCC organisms be evaluated for growth/inhibition.

Organism	ATCC #	Expected Growth	Special Reaction	
			Lipase	Lecithinase
B. fragilis	25285	No Growth	-	-
F. necrophorum	25286	No Growth	-	-
C. sporogenes	3584	24 hours	+	-
E. coli	25922	No Growth	-	-

Physical Appearance: BSM should appear opaque and pale yellow in color.

References

1. Dowell, V. R., Jr., G. L. Lombard, F. S. Thompson and A. Y. Armfield. 1977. *Media for the Isolation, Characterization and Identification of Obligately Anaerobic Bacteria.* USDHHS, CDC. Atlanta, GA 30333.

2. Engelkirk, P. G., Duben-Engelkirk, J. and Dowell, V. R. 1992. *Principles and Practices of Clinical Anaerobic Bacteriology*. Star Publishing Co., Belmont, CA 94002.

3. Holdeman, L. V., F. P. Cato and W. E. C. Moore. 1987. *Anaerobe Laboratory Manual*. Virginia Polytechnic Institute and State University. Blacksburg, VA 24061

4. Jousimeis-Somer, H. R., Summanen, P., Citron, D. M., Baron, E. J., Wexler, H. M. and S. M. Finegold. 2002. *Wadsworth – KYL Anaerobic Bacteriology Manual*. Star Publishing Co., Belmont, CA 94002.

5. CLSI. *Quality Control for Commercially Prepared Microbiological Culture Media; Approved Standard- Third Edition.* (2004). CLSI document M22-A3. CLSI, 940 West Valley Road, Suite 1400, Wayne, PA 19087-1898.

6. Dezfulian, M., McCroskey, L. M., Hatheway, C. L., & Dowell, V. R. (1981). Selective medium for isolation of Clostridium botulinum from human feces. *Journal of Clinical Microbiology*, *13*(3), 526–531.

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