SNAPSHOOT
ENGINEERED FOR A SAFER TOMORROW

현장을 이해하고, 필요한 솔루션을 연결합니다.

산업안전 · 추락방지 시스템
산업용 소재 · 건축자재
제품 제안부터 공급·시공·설치·교육까지



COMPANY INFORMATION

스냅슛 (SNAPSHOOT)

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TECHNICAL DOCUMENTS

인증서 · 데이터시트 · 기술자료

제품의 규격과 성능, 인증 및 적용 조건을 확인하기 위한 자료입니다.

ABOUT SNAPSHOOT

제품 공급을 넘어, 현장에 맞는 해결책으로

스냅슛은 산업현장의 작업 환경과 요구 조건을 바탕으로
적합한 제품과 시스템을 제안합니다. 현장 실사를 통해 설치 조건을 확인하고,
공급부터 시공·설치 및 사용 교육까지 필요한 과정을 함께합니다.

추락방지 시스템

안전대부착설비 · 수평·수직 라이프라인
레일 시스템 · 리지드 포스트

밀폐공간 진입·구조 솔루션

데빗암 · 삼각대 · 구조용 윈치
윈치 안전블록 · 구조장비

산업안전 보호구

전신형 안전대 · 랜야드 · 안전블록
작업 환경에 맞춘 개인보호구

산업용 소재·건축자재

산업용 테이프 · 접착제 · 기능성 소재
구조용 스크류 · 목조건축 자재

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홈페이지 바로가기 →
문서 라이브러리 바로가기 →
시공사례 바로가기 →
문의하기 →

본 페이지는 스냅슛의 자료 제공 안내용 표지입니다. 첨부된 인증서 및 기술자료의 발행 주체, 인증 대상과 적용 범위는 해당 원문을 기준으로 확인해 주세요.

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Violet Red Bile Agar with MUG (VRBA-MUG)
SKU: 700003149, 700003150, 700003151, 700003152, 700004445
NCM0064

Intended Use
Violet Red Bile Agar with MUG is used for the detection of coliforms and the fluorogenic detection of *Escherichia coli*. Violet Red Bile Agar with MUG is not intended for use in the diagnosis of disease or other conditions in humans.

Description
Violet Red Bile Agar W/ MUG is specified in many procedures to enumerate coliforms in food and dairy products. In 1982, Feng and Hartman developed a rapid fluorogenic assay for *Escherichia coli* by incorporating 4-methylumbelliferyl-β-D-glucuronide (MUG) into Lauryl Tryptose Broth. Similarly, incorporating MUG into Violet Red Bile Agar permits the detection of *E. coli* among the coliform colonies. Standard methods procedures specify Violet Red Bile Agar with MUG for detecting *E. coli* in food and dairy products by fluorescence. This medium is often abbreviated as VRBA w/ MUG.

Formula / Liter

Enzymatic Digest of Gelatin	7.0 g/L
Yeast Extract	3.0 g/L
Bile Salts Mixture	1.5 g/L
Lactose	10.0 g/L
Sodium Chloride	5.0 g/L
Neutral Red	0.03 g/L
Crystal Violet	0.002 g/L
4-Methylumbelliferyl-β-D-Glucuronide	0.1 g/L
Agar	15.0 g/L

Final pH: 7.4 ± 0.2 at 25°C
Formula is adjusted and/or supplemented as required to meet performance specifications.

Precaution
Refer to SDS

Preparation
1. Suspend 41.6 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium. DO NOT AUTOCLAVE.
3. Cool to 45-50°C.

Test Procedure
1. Process each sample as appropriate by either the pour plate method (with or without overlay) or surface spread. (with or without overlay).
2. Incubate plates at 33-38°C for 18-24 hours.
3. Examine plates for growth and fluorescence.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and pinkish to reddish-beige.

Prepared Appearance: Prepared medium is trace to slightly hazy and reddish-purple.

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Expected Cultural Response: Cultural response on Violet Red Bile Agar w/ MUG incubated aerobically at 33-38°C and examined for growth after 18 - 24 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Recovery	Fluorescence
Enterobacter aerogenes ATCC® 13048	50-200	>50%	Negative
Enterococcus faecalis ATCC® 29212	$>10^4$	Complete Inhibition	Negative
Escherichia coli ATCC® 25922	50-200	>50%	Positive
Pseudomonas aeruginosa ATCC® 27853	$>10^3$	Growth	Negative
Salmonella typhimurium ATCC® 14028	50-200	>50%	Negative
Staphylococcus aureus ATCC® 25923	$>10^4$	Complete Inhibition	Negative

The organisms listed are the minimum that should be used for quality control testing.

Results

Coliform organisms form purple-red colonies that are generally surrounded by a reddish zone of precipitated bile. When examined under long-wave fluorescent light, MUG-positive colonies are surrounded by a bluish fluorescent halo. MUG-negative colonies lack the fluorescent halo. *E. coli* colonies are red surrounded by a zone of precipitated bile and fluoresce blue under long-wave UV light. *Salmonella* and *Shigella* strains that produce glucuronidase may be encountered infrequently, but these are generally lactose negative and appear as colorless colonies which may fluoresce.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Glucuronidase-negative strains of *E. coli* have been encountered. Similarly, glucuronidase-positive strains of *E. coli* that do not fluoresce have been reported. Strains of *Salmonella* and *Shigella* that produce glucuronidase may infrequently be encountered. These strains must be distinguished from *E.coli* on the basis of other parameters, e. g., gas production, lactose fermentation or growth at 44.5°C.

Storage

Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

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References

1. Marshall, R. T. (ed.). 2004. Standard methods for the examination of dairy products, 17th ed. American Public Health Association, Washington, D.C.
2. Vanderzant, C. and D. F. Splittstoesser (eds.). 2015. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
3. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm.
4. Feng, P. C. S., and P. A. Hartman. 1982. Fluorogenic assays for immediate confirmation of *Escherichia coli*. Appl Environ. Microbiol. 43:1320-1329.
5. Chang, G. W., J. Brill, and R. Lum. 1989. Proportion of β-D-glucuronidase negative *Escherichia coli* in human fecal samples. Appl. Environ. Microbiol. 55:335-339.
6. Hansen, W., and E. Yourassowsky. 1984. Detection of β-D-glucuronidase in lactose fermenting members of the family *Enterobacteriaceae* and its presence in bacterial urine cultures. J. Clin. Microbiol. 20:1177-1179.
7. Kilian, M., and P. Bulow. 1976. Rapid diagnosis of *Enterobacteriaceae.* Acta. Pathol. Microbiol. Scand. Sect. B, 84:245-251.
8. Mates, A., and M. Shaffer. 1989. Membrane filtration differentiation of *E. coli* from coliforms in the examination of water. J. Appl. Bacteriol. 67:343-346.
9. Damare, J. M., D. F. Campbell, and R. W. Johnston. 1985. Simplified direct plating method for enhanced recovery of *Escherichia coli* in food. J. of Food Sci. 50:1736-1746.

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