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

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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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EC Medium with MUG
SKU: 700003271, 700003272, 700003273, 700003274
NCM0107

Intended Use
EC Medium w/ MUG is used for the fluorogenic detection of *Escherichia coli* in a laboratory setting. EC Medium w/ MUG is not intended for use in the diagnosis of disease or other conditions in humans.

Description
EC Medium was developed by Hajna and Perry in an effort to improve the methods for the detection of the coliform group and *E. coli*. This medium consists of a buffered lactose broth with the addition of 0.15% Bile Salts Mixture. Growth of spore-forming bacteria is inhibited by the bile salts, while growth of *E. coli* is enhanced by its presence. EC Medium w/ MUG is the same formula as EC Medium, with the addition of 4-methylumbelliferyl-β-D-glucuronide. Feng and Hartman developed a rapid assay for *E. coli* by incorporating 4-methylumbelliferyl-β-D-glucuronide (MUG) into Lauryl Tryptose Broth at a final concentration of 100 μg/mL. Moburg determined the amount of MUG could be reduced to a final concentration of 50 μg/mL without adversely affecting results.

EC Medium w/ MUG is prepared according to the formula specified by US EPA and methods for water and food testing.

Typical Formulation

Tryptose	20.0 g/L
Lactose	5.0 g/L
Bile Salts	1.5 g/L
Dipotassium Phosphate	4.0 g/L
Monopotassium Phosphate	1.5 g/L
Sodium Chloride	5.0 g/L
4-Methylumbelliferyl-β-D-Glucuronide	0.05 g/L

Final pH: 6.9 ± 0.2 at 25°C
Formula is adjusted and/or supplemented as required to meet performance specifications.

Precaution
Refer to SDS

Preparation
1. Dissolve 37 g of the medium in one liter of purified water.
2. Mix thoroughly.
3. Distribute into tubes containing inverted Durham tubes.
4. Autoclave at 121°C for 15 minutes.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is brilliant to clear and yellow, with none to light precipitate.

CULTURAL RESPONSE
With reference to the FDA/BAM Chapter 4 Enumeration of Escherichia coli and the Coliform Bacteria (update 2/2013) and APHA Standard Methods for the Examination of Water and Wastewater 20th Edition Section 9221: The medium was prepared according to label directions and inoculated with the organisms listed below. Two inoculation methods can be followed:

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- Direct inoculation of test strains into EC Medium with MUG with incubation at 35± 2°C and at 44.5±0.2°C. Incubate cultures in an aerobic atmosphere at indicated temperature and then examine for growth and gas at 24 ± 2 hours; if no gas re-incubate to 48 ± 3 hours to confirm gas.

- Pre-enrich test strains in LTB (Lauryl Tryptose Broth) at 35± 2°C. If no growth/gas after 24 hours, re-incubate up to 48 hours and transfer a loopful of LTB enriched culture to EC Medium w/ MUG and incubate in a water bath at 44.5 aerobically. Examine for growth, gas and fluorescence at 24 ± 2 hours.

			EXPECTED RESULTS			
MICRO-ORGANISM	**ATCC**	**APPROX. INOCULUM (CFU)**	**Direct inoculation into EC w MUG at 35C/44.5C**		**LTB pre-enrichment at 35C; EC w MUG at 44.5C**	
			Growth	Gas/Fluor	Growth	Gas/Fluor
Enterococcus faecalis	29212	10^3	Inhibited	N/A	Inhibited	N/A
Escherichia coli	25922	10-300 for 35C; ~10^3 for 44.5C; 10-100 for LTB pre-enrichment	Fair to excellent	Weak pos gas; pos fluor w/ growth	Good to Excellent	Pos gas; pos fluor

Test Procedure
Refer to appropriate references for specific procedures using EC Medium w/ MUG.

Results
Following incubation observe tubes for growth, production of gas, and fluorescence. Positive gas production is demonstrated by displacement of the medium from the fermentation vial. Positive MUG reactions exhibit a bluish fluorescence under long-wave (approximately 366 nm) UV light. Typical strains of *E. coli* are positive for both gas production and fluorescence. Non-*E.coli* coliforms that grow may produce gas, but will not exhibit fluorescence.

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.

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Limitations of the Procedure

1. Some strains may be encountered that grow poorly or fail to grow on this medium.
2. Strains of *E. coli* that fail to grow in EC Medium w/ MUG, fail to produce gas, or fail to produce glucuronidase may infrequently be encountered. Strains of *Salmonella*, *Shigella* and *Yersinia* that glucuronidase may be encountered. These strains must be distinguished from *E. coli* on the basis of other parameters, e.g., gas production, growth at 44.5°C.
3. Shellfish samples may contain endogenous glucuronidase which may cause false positive fluorescence reactions at the presumptive stage. It has been recommended to use EC Medium with MUG in the confirmatory stage for this sample group.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

1. Hajna and Perry. 1943. Am J. Public Health. 33:550.
2. Feng, P. C. S., and P. A. Hartman. 1982. Fluorogenic assays for immediate confirmation of *Escherichia coli*. Appl. Environ. Microbiol. 43:1320-1329.
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5. Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.). 2017. Standard methods for the examination of water and wastewater, 23rd ed., American Public Health Association, Washington, D.C.
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