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)

ADDRESS (15431) 경기도 안산시 단원구 풍전로 37-9 트리플렉스 301동 118호
TEL 0507-1374-9229
FAX 0504-481-6749
E-MAIL bkkim@snapshoot.co.kr

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.

EF-18 AGAR (6901)

Intended Use

EF-18 Agar is used for the selective and differential isolation of *Salmonella*, using the ISO-GRID® and/or NEO-GRID™ Membrane Filtration System in a laboratory setting. EF-18 Agar is not intended for use in the diagnosis of disease or other conditions in humans.

Product Summary and Explanation

EF-18 Agar was developed for the primary selective isolation of presumptive *Salmonella* spp. from enrichment broth using the ISO-GRID System. This medium suppresses growth of Gram-positive bacteria and certain Gram-negative bacteria, while enhancing growth of *Salmonella* spp. EF-18 Agar aids in differentiating *Salmonella* spp. from other *Enterobacteriaceae* based on lysine decarboxylase and sucrose fermentation reactions. EF-18 Agar is incubated at 42°C, providing additional selectivity against certain Gram-negative bacteria.

EF-18 Agar is recommended for the primary differential isolation and detection of *Salmonella* spp. from all foods using the ISO-GRID and /or NEO-GRID Membrane Filtration System.[1,2,3]

Principles of the Procedure

Enzymatic Digest of Animal Tissue and Yeast Extract are the nitrogen and vitamin sources in EF-18 Agar. Dextrose and Sucrose are the fermentable carbohydrates. L-Lysine is a substrate for the lysine decarboxylase enzyme. Bile Salts, Sulfapyridine, and Novobiocin are selective agents. Bile Salts inhibit Gram-positive bacteria, Sulfapyridine and Novobiocin inhibit certain Gram-negative bacteria. Magnesium Sulfate aids in cell wall repair of injured *Salmonella* spp., enabling growth in the presence of Bile Salts. Bromthymol Blue is the pH indicator. Agar is the solidifying agent.

Bacteria that are able to grow on EF-18 Agar will ferment dextrose first, at a concentration of only 0.25% (w/v). Once the dextrose is depleted sucrose positive bacteria will ferment sucrose, producing a local pH drop in the colony and a color change to yellow in the pH indicator. Sucrose negative bacteria that are capable of producing the lysine decarboxylase enzyme will digest L-Lysine, increasing the pH, resulting in a color change to green, blue-green or blue in the pH indicator. Bacteria that are sucrose negative and lysine decarboxylase negative produce a mild local pH drop due to the initial fermentation of dextrose, causing a color change to yellow in the pH indicator. *Salmonella* spp. is sucrose negative and lysine decarboxylase positive resulting in green, blue-green, or blue colonies on EF-18 Agar.

Formula / Liter

Enzymatic Digest of Animal Tissue	5 g
Yeast Extract	3 g
L-Lysine	10 g
Dextrose	2.5 g
Sucrose	15 g
Magnesium Sulfate	1.5 g
Bile Salts	1.5 g
Sulfapyridine	0.3 g
Bromthymol Blue	0.03 g
Novobiocin	0.015 g
Agar	15 g

Final pH: 6.8 ± 0.1 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions

1. For Laboratory Use Only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 54 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.

3. DO NOT AUTOCLAVE.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and off-white to light beige.

Prepared Appearance: Prepared medium is clear to trace hazy, none to trace precipitate, and green.

Expected Cultural Response: Cultural response on EF-18 Agar, using the ISO-GRID and/or NEO-GRID Membrane Filtration System method. Inoculated EF-18 Agar was incubated at the appropriate atmosphere and temperature and examined for growth at 18 - 24 hours.

Microorganism	Approx Inoculum (CFU)	Expected Results	Expected Reactions
Klebsiella pneumoniae ATCC 13883	10^3	Partial to complete inhibition	Yellow colonies (if recovered)
Salmonella hvittingfoss QA-023	10 - 300	Good to excellent growth	Green colonies
Salmonella infantis QA-025	10 - 300	Good to excellent growth	Green colonies
Salmonella typhimurium ATCC 14028	10 - 300	Good to excellent growth	Green colonies

Test Procedure

For sample details refer to the ISO-GRID Methods Manual and NEO-GRID Protocols.

1. Prepare a sample homogenate and incubate in pre-enrichment broth.
2. Transfer 0.1 mL of the pre-enrichment culture into 10 mL of Tetrathionate Broth Base and incubate.
3. Filter 0.1 mL of Tetrathionate Broth Base culture through an ISO-GRID / NEO-GRID Hydrophobic Grid Membrane Filter.
4. Place the membrane filter on the surface of a pre-dried EF-18 Agar.
5. Incubate the inoculated EF-18 Agar in an inverted position in a dry air incubator at 41.5 - 42.5°C for 18 - 24 hours. Examine membrane filter for colonies.

Results

Presumptive *Salmonella* spp. colonies appear green, blue-green, or blue. If suspect colonies are present, subculture three representative colonies directly to biochemical screening media and purity plates for identification. If cultures are pure and reactions typical for *Salmonella*, proceed with serological confirmation.

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.

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.

Limitation of the Procedure

Due to nutritional variation some strains may grow poorly or fail to grow on this medium.

Packaging

EF-18 Agar **Code No.** **6901A** **500 g**

References

1. **Entis, P.** 1990. Improved hydrophobic grid membrane filter method, using EF-18 agar, for detection of *Salmonella* in foods: Collaborative study. J. AOAC. **73**:734-742.
2. **Entis, P.** 1996. Validation of the ISO-GRID 2-day rapid screening method for detection of *Salmonella* spp. in egg products. J. Food Prot. **59**:555-558.
3. **Entis, P., and P. Boleszczuk.** 1991. Rapid detection of *Salmonella* in foods using EF-18 agar in conjunction with the hydrophobic grid membrane filter. J. Food Prot. **54**:930-934.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.

NEOGEN CORPORATION
620 Lesher Place, Lansing MI 48912
517/372-9200 • 800/783-3212 • fax: 800/875-8563
neogen-info@neogen.com • www.neogen.com