OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

Acetate Differential Agar

Principle

Acetate differential agar was modified by Tatum, Ewing, and Weaver by replacing sodium citrate with sodium acetate. Acetate differential agar is composed of sodium acetate, magnesium sulphate, sodium chloride, monopotassium phosphate, dipotassium hydrogen phosphate, bromothymol blue, and agar. Sodium acetate is utilized as a sole source of carbon. The utilization of sodium acetate and subsequent formation of an alkaline condition detected by the presence of bromothymol blue indicator and shift in pH turns the indicator from green to blue. Magnesium sulphate is providing essential ions, and sodium chloride maintains osmotic balance. The phosphate buffers the medium, and agar is a solidifying agent.

Use: For the differentiation of Shigella species from those of the Escherichia genus.

Contents*

Ingredients	Gram/Liter
Sodium acetate	2.000
Magnesium sulphate	0.100
Sodium chloride	5.000
Monoammonium phosphate	1.000
Dipotassium hydrogen phosphate	1.000
Bromothymol Blue	0.080
Agar	20.000
pH at 25˚C	6.7±0.2

***Formula adjusted for optimum performance and parameters**

Directions: Dissolve 29.18 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs. pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in test tubes. Slant the tubes to have a small butt and slant, allow to solidify. Ensure complete solidification and inoculate test sample aseptically.

Specimens' types analyzed

Isolates from pharmaceutical samples, clinical and non-clinical samples etc.

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Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	**Greenish beige colored free flowing, homogeneous powder**
Reaction of 2.91% solution	**6.7±0.2 at 25˚C**
pH	**6.50 – 6.90**
Gelling	**Firm comparable with 2.0% agar gel**
Color and clarity of ready medium	**Forest green colored, slightly opalescent gel**
Growth Promotion properties	**Best at ≤ 100 CFU at 25-30°C for 1-7 days**
Indicative properties	**Optimum at ≤ 100 CFU at 25-30°Cfor 1-7 days**
Negative control	**Performed using sterile distilled water**

Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate the plates at 25-30°C for 1-7 days Inoculum 50-100 CFU.

Organism	ATCC	Growth	Color of medium around the colonies	Acetate utilization
Escherichia coli	**8739**	**Luxuriant**	**Blue color**	**Positive**
Escherichia coli	**25922**	**Luxuriant**	**Blue color**	**Positive**
Salmonella typhimurium	**14028**	**Poor**	**Poor blue color**	**Positive**
Shigella flexneri	**9199**	**None-poor**	**No color change**	**Negative**
Shigella sonnei	**25931**	**None-poor**	**No color change**	**Negative**
Proteus vulgaris	**13315**	**Inhibited**	**--**	**--**

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Storage and Shelf Life: **The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.**

Disposal: **To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.**

Reference

1. **Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.**
2. **Difco Manual (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.**
3. **Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.**
4. **Tatum H. W., Ewing W. H., and Weaver R. E., 1974, Manual of Clinical Microbiology,2nd Ed., American Society for Microbiology, Washington D.C.**

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