

TECHNICAL DATA SHEET

Hektoen Enteric Agar

Principle:

Hektoen Enteric Agar is consisting protease peptone, yeast extract, bile salt mixture, lactose, sucrose, salicin, sodium chloride, sodium thiosulphate and ferric ammonium citrate and acid fuchsin, bromothymol blue and agar. It resourceful for the recovery rate of *Salmonella* sp. Protease peptone provides nitrogen, carbon, and amino acids required for organism growth. Yeast extract provide essential carbon, vitamin, nitrogen and amino acids sources. Bile salts inhibit the growth of most Gram-positive organisms. Lactose, salicin and sucrose, serves as carbon source, added in media to boost the growth and differentiation of enteric bacteria. Sodium chloride maintains the osmotic equilibrium. Sodium thiosulfate serves as a source of sulfur. Ferric ammonium citrate added in medium to detect hydrogen sulfide production. Ferric ammonium citrate serves as iron source, and in presence of sodium thiosulphate produce hydrogen sulfide gas to form a black precipitate. The bromothymol blue and acid fuchsin are pH indicators, the bacteria capable of fermenting one or more of the carbohydrates produces yellow- or orange-colored colonies like *Klebsiella pneumoniae*, that ferments lactose. While the Enterobacters that are Non-fermenters will produce blue-green colonies.

Use: Recommended for differential and selective isolation of *Salmonella* and *Shigella* species from enteric pathological specimens.

Contents*

Ingredients	Gram/Litre
Protease Peptone	12.00
Yeast Extract	3.00
Bile Salt Mixture	9.00
Lactose	12.00
Sucrose	12.00
Salicin	2.00
Sodium Chloride	5.00
Sodium Thiosulfate	5.00
Ferric Ammonium Citrate	1.50
Acid Fuchsin	0.10
Bromothymol Blue	0.065
Agar	14.00
pH at 25°C	7.5±0.2

* Formula adjusted for optimum performance and parameters

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Directions: Dissolve 75.66 grams in 1000 ml distilled water. Boil to dissolve the medium completely and Do not autoclave the medium, cool it to 42-45 °C and distribute aseptically. Ensure complete solidification inoculate test sample aseptically.

Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

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	Light purple beige colored free flowing, homogeneous powder
Reaction of 7.56% solution	7.5 ±0.2 at 25 °C
pH	7.30- 7.70
Gelling	Firm comparable with 1.4% agar gel
Color and clarity of ready medium	Green with yellowish ting colored opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

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Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate at 35 ± 2 °C for 18-24 hours.

Organism	ATCC	Inoculum	Growth	Recovery	Colony color
<i>Salmonella typhi</i>	14028	50-100	Luxuriant	$\geq 70\%$	Bluish green color
<i>Shigella flexneri</i>	9199	50-100	Luxuriant	$\geq 60\%$	Greenish blue color
<i>Escherichia coli</i>	8739	50-100	Poor	$\geq 30\%$	Orange
<i>Klebsiella aerogenes</i>	13048	50-100	Poor	$\geq 30\%$	Salmon orange
<i>Enterococcus faecalis</i>	14506	50-100	Inhibited	--	--

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. Downes F P and Ito K(Eds.), (2001), *Compendium of Methods For The Microbiological Examination of Foods*, 4th Ed.,APHA, Washington, D.C
4. Marshall, R. T. (ed.). (1993). *Standard methods for the microbiological examination of dairy products*, 16th Ed. American Public Health Association, Washington, D.C.

Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), *Standard methods for the examination of water and wastewater*. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.

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