HEKTOEN ENTERIC AGAR

HEAG-00P-500

- **Principle**

Hektoen Enteric Agar is a selective and differential medium designed for the isolation and differentiation of enteric pathogens, particularly Salmonella and Shigella species, from clinical and food samples. The formulation enhances the recovery of Salmonella while suppressing competing intestinal flora.

Proteose peptone provides nitrogen, carbon and amino acids necessary for bacterial growth, while yeast extract supplies additional vitamins and essential growth factors. A bile salt mixture inhibits most Gram-positive organisms and reduces the growth of non-pathogenic Gram-negative flora, increasing the selectivity of the medium. Sodium chloride maintains osmotic balance.

Lactose, sucrose and salicin are included as fermentable carbohydrates to promote growth and allow differentiation of enteric bacteria based on fermentation patterns. Organisms capable of fermenting one or more of these carbohydrates produce acid, resulting in yellow to orange colonies due to the action of the pH indicators bromothymol blue and acid fuchsin. Typical lactose-fermenting coliforms, such as Klebsiella pneumoniae, produce yellow to salmon-coloured colonies.

Non-fermenting organisms, including many Salmonella and Shigella species, do not produce significant acid and therefore form blue-green colonies. Sodium thiosulphate serves as a sulphur source, and ferric ammonium citrate acts as an indicator for hydrogen sulphide production. In the presence of hydrogen sulphide, a black precipitate of ferrous sulphide is formed, resulting in colonies with black centres, a characteristic commonly observed with Salmonella species. Agar is included as the solidifying agent.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
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

- **Preparation**

Dissolve 75.66 grams in 1,000 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.

- **Applications and use**

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

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Light purple
Colour of the prepared medium	Green-yellowish
Final pH (25 °C)	7.5 ± 0.2

- **Microbiological test**

Inoculate and incubate at 35±2 °C for 18-24 hours. Inoculum 50-100 CFU.

Microorganism	ATCC	Growth	Recovery	Colony colour
Salmonella typhimurium	14028	Luxuriant	≥ 70%	Bluish green colour with black centre (H_2S production)
Salmonella enteritidis	13076	Luxuriant	≥ 70%	Bluish green colour with black centre (H_2S production)
Shigella flexneri	9199	Luxuriant	≥ 60%	Greenish blue colour
Escherichia coli	8739	Poor	≥ 30%	Orange
Klebsiella aerogenes	13048	Poor	≥ 30%	Salmon orange
Enterococcus faecalis	14506	Inhibited	-	-

- **Storage**

The product is highly hygroscopic; keep the container always closed 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. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

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Downes F P and Ito K(Eds.), (2001), Compendium of Methods for The Microbiological Examination of Foods, 4th Ed.,APHA, Washington, D.C

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.

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.