

CM 20797 -HEKTOEN ENTERIC AGAR (ISO 21567:2004)

INTENDED USE

For differential & selective isolation of Salmonella and Shigella from enteric pathological specimens.

PRODUCT SUMMARY AND EXPLANATION

HektoenEntericAgar was developed in 1967by King and Metzger of the Hektoen Institute in order to increase the frequencies of isolation of Shigella and Salmonella organisms when compared with their recovery on other media frequently utilized in clinical laboratories at that time. Sodium deoxycholate has been replaced by bile salts in reduced concentration. This allows growth of Shigella as well as the Salmonellae. The peptone concentrations have been increased

in order to offset the inhibitory effects of the bile salts. Hektoen Enteric Agar is currently recommended as one of several plating media for the culture of Enterobacteriaceae from stool specimens. Foods containing poultry, eggs or dairy products are the most frequent vehicles for foodborne Salmonellosis, and a variety of procedures have been developed using Hektoen Enteric Agar as part of the multi-step procedure to isolate Salmonella. This medium is recommended by United States Pharmacopoeia, 2009 for testing the presence of Salmonella in dietary supplements. This medium is recommended in testing of Salmonella in food sample by various standards. The composition & performance criteria of this medium are as per the specifications laid down in ISO 21567:2004.

COMPOSITION

Ingredients	Gms / Ltr
Agar	15.000
Proteose peptone	12.000
Lactose	12.000
Sucrose	12.000
Bile salts mixture	9.000
Sodium chloride	5.000
Sodium thiosulphate	5.000
Yeast extract	3.000
Salicin	2.000
Ferric ammonium citrate	1.500
Acid fuchsin	0.100
Bromothymol blue	0.065

PRINCIPLE

Theincreased concentration ofcarbohydrate and proteose peptone helps to reduce the inhibitory effect of bile salts and indicators and allows good growth of Salmonella and Shigella species while inhibiting the normal intestinal flora. The medium contains three carbohydrates, i.e., lactose, sucrose and salicin for differentiation of enteric pathogens. The higher lactose concentration aids in the visualization of enteric pathogens and minimizes the problem of delayed lactose fermentation. Salicin is fermented by many coliforms including those that do not ferment lactose and sucrose. Combination of ferric ammonium citrate and sodium thiosulphate in the medium enables the detection of hydrogen sulfide production, thereby aiding in the differentiation process due to the formation of black centered colonies. The indicator system, consisting of acid fuchsin and bromothymol blue, has lower toxicity as compared to other enteric media, resulting in improved recovery of enteric pathogens. Hoben et al further enhanced the selectivity of the medium by addition of novobiocin at a concentration of 15 mg/litre, which inhibits Citrobacter and Proteus species.



INSTRUCTION FOR USE

Dissolve 76.67 grams in 1000ml distilled water.

Gently heat to boiling with gentle swirling and dissolve the medium completely. Do Not Autoclave.

Cool to 45-50°C.

Mix well and pour into sterile petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Dehydrated powder	:	Cream to yellow colour with tancast, homogeneous free flowing powder
Appearance of Prepared medium	:	Green coloured, clear to slightly opalescent gel.
pH (at 25°C)	:	7.5± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Salmonella enteritidis	13076	50-100	Luxuriant	≥50%	Greenish blue, may have black centres (H ₂ S production)	35-37°C	18-24 Hours
Salmonella typhi	6539	50-100	Luxuriant	≥50%	Greenish blue, may have black centres (H ₂ S production)	35-37°C	18-24 Hours
Salmonella typhimurium	14028	50-100	Luxuriant	≥50%	Greenish blue, may have black centres (H ₂ S production)	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	≥50%	Greenish blue	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Fair	20-30%	Orange (may have bile precipitate)	35-37°C	18-24 Hours
Escherichia coli	8739	50-100	Fair	20-30%	Orange (may have bile precipitate)	35-37°C	18-24 Hours

PACKAGING

In 100 & 500gm packaging size.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use, if powder show evidence of microbial contamination, discoloration, drying, or other signs of deterioration.

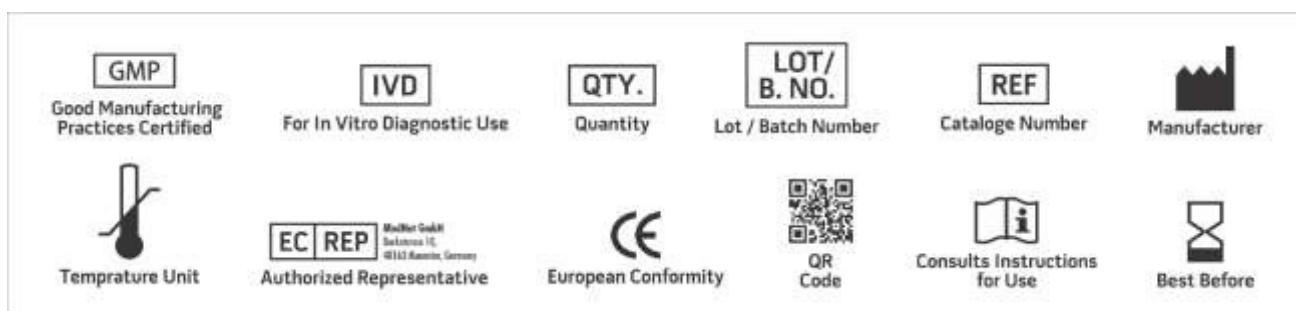
DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.



REFERENCES

1. King, S., and W.I. Metzger. 1968. A new plating medium for the isolation of enteric pathogens. I. Hektoen enteric agar. Appl. Microbiol. 16:577-578.
2. King, S., and W.I. Metzger. 1968. A new plating medium for the isolation of enteric pathogens. II. Comparison of Hektoen enteric agar with SS and EMB agar. Appl. Microbiol. 16:579-581.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I. Williams & Wilkins, Baltimore, Md.
4. Bopp, C.A., Brenner, F.W., Fields, P.I., Wells, J.G., and N.A. Strockbine. 2003. Escherichia, Shigella, and Salmonella. In: Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Tenen (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.
5. Thomson, R.B., and J.M. Miller. 2003. Specimen collection, transport, and processing: bacteriology. In: Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Tenen (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.
6. Kist, M. et al. 2000. Infektionen des Darmes. In: MIQ – Qualitätsstandards in der mikrobiologisch-infektiologischen Diagnostik. Vol 9. Urban und Fischer, München, Jena.
7. Giannella R. A., 1996, Salmonella. In: Barons Medical Microbiology (Baron S et al, eds.), 4th Ed., Univ. of Texas Medical Branch, Hoben D.A., Ashton D.H.A. and Peterson A.C., 1973, Appl. Microbiol., 21:126.
8. Hoben D. A., Ashton D. H. A. and Peterson A. C. (1973) Appl. Microbiol. 21. 126-129.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*ForLabUse Only