

Hektoen Enteric Agar (i23072)

Hektoen Enteric (HE) Agar is a moderately selective medium used in qualitative procedures for the isolation and cultivation of gram-negative enteric microorganisms, especially *Shigella*, from a variety of clinical and nonclinical specimens.

Industry: Food / Clinical

Principles & Uses

Hektoen Enteric Agar is a selective and differential medium designed to isolate and distinguish enteric pathogens such as *Salmonella* and *Shigella*, which are responsible for various gastrointestinal diseases, along with other Gram-negative *Enterobacteriaceae*. This medium is commonly used in food testing to isolate these pathogens.

The components within Hektoen Enteric Agar serve specific roles. Peptone and Yeast extract provide essential nutrients for bacterial growth. The inclusion of three fermentable carbohydrates (Lactose, Sucrose, Salicin) as carbon and energy sources helps overcome the inhibitory effects of Bile salts on *Salmonella* and *Shigella*. The higher lactose concentration aids in visualizing enteric pathogens and minimizes delayed lactose fermentation. Bromothymol blue and Acid fuchsin function as pH indicators, while Sodium thiosulfate provides Sulphur, and Ferric ammonium citrate serves as an indicator for H₂S production. Sodium chloride maintains osmotic balance. Novobiocin (15 mg/L) may be added to improve selectivity by inhibiting *Citrobacter* and *Proteus* species.

Inoculation with clinical specimens and rectal swabs is followed by incubation, enabling the differentiation of pathogenic enteric organisms. Isolated colonies indicate the presence of pathogens, and the medium's inhibitory properties aid in their identification.

Composition (gr/L)

Proteose Peptone 15, Yeast Extract 3, Bile Salt No.3 2, Lactose 14, Sucrose 14, Salicin 2, Sodium Chloride 5, Sodium Thiosulfate 5, Ferric Ammonium Citrate 1.5, Bromothymol Blue 0.05, Acid Fuchsin 0.08, Agar 13.5
Final pH at 25°C 7.7 ± 0.2

Preparation from dehydrated Powder

Suspend 75 g of the powder in 1 Liter of purified water. Mix thoroughly. Heat to boiling with frequent agitation to dissolve completely. **DO NOT OVERHEAT. DO NOT AUTOCLAVE.** Cool to 45-50°C and use immediately.

Quality Control

Dehydrated Appearance: Light beige, may have a slight green cast, free flowing, homogeneous.

Prepared Appearance: Green with yellowish cast, slightly opalescent.

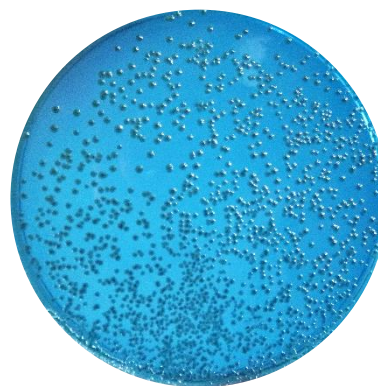
Reaction of 7.5% Solution at 25°C: pH 7.7 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 18-24 hours.

Organism (ATCC*)	Recovery	Colony Color
<i>Escherichia coli</i> (25922)	Partial inhibition	Salmon-orange may have bile precipitate
<i>Enterococcus faecalis</i> (29212)	Marked to complete inhibition	-
<i>Salmonella enterica</i> subsp. <i>enterica</i> serotype <i>Typhimurium</i> (14028)	Good	Greenish Blue, W/Black centers
<i>Shigella flexneri</i> (12022)	Good	Greenish Blue

*ATCC is a registered trade mark of the American Type Culture Collection.



Colonies of *Salmonella* appear as greenish-blue with black centers.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.