

LEIFSON AGAR

TM 1007

For isolation of *Salmonella* and *Shigella* species

Composition

Ingredients	Gms/Ltr.
Agar	12.00
Lactose	10.00
Sodium citrate	6.00
Sodium thiosulphate	5.40
Meat extract	5.00
Meat peptone	5.00
Sodium deoxycholate	2.50
Ferric citrate	1.00
Neutral red	0.020

* Dehydrated powder store, hygroscopic in nature, place in a dry, in tightly - sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 41.42gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. **DO NOT AUTOCLAVE** and **do not remelt solidified agar**. Cool to 40°C and pour into sterile Petri plates.

Warning: The medium is heat sensitive. No further sterilization is necessary or desirable.

Appearance: Red to orange colour, clear to slightly opalescent gel
pH (at 25°C): 7.5 ± 0.2

Principle

LEIFSON AGAR was first described by Leifson for isolation of intestinal pathogens and the enumeration of pathogens in milk and water samples. Later the modified medium is to be used for screening *Salmonella* spp. and *Shigella* spp. Medium contains Meat extract and Meat peptone provides the nitrogen, amino acids, vitamins and other essential growth nutrients. Agar is a solidifying agent. Sodium deoxycholate, Ammonium ferric citrate and Sodium citrate completely suppress the gram - positive microorganisms and inhibit the coliforms more or less. Sodium thiosulphite is reduced into sulphide, indicated by black centered colonies, due to the formation of iron sulphide. Neutral red is a pH indicator which changes to a red colour below pH 6.8. Due to the fermentation of lactose and the attendant acid production the colour changes to red. Non fermenters species grow as colourless colonies. Differentiation of enteric bacilli is based on fermentation of Lactose.

Interpretation

Cultural characteristics observed after inoculating (10² - 10³CFU/ml), on incubation at 37 ± 2°C for 18 - 24 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Appearance of colony	H ₂ S
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PRODUCT DATA SHEET

<i>Escherichia coli</i>	25922	10 ³	Poor	Pink with bile ppt, zone	Negative reaction
<i>Salmonella typhimurium</i>	14028	10 ³	Good	Colourless	Positive reaction, black centered colonies
<i>Shigella sonnei</i>	25931	10 ²	Good	Colourless	Negative reaction
<i>Shigella flexneri</i>	12022	10 ²	Good	Colourless	Negative reaction
<i>Enterococcus faecalis</i>	29212	10 ²	Inhibited	-----	-----

References

1. LEIFSON, E.: New culture media based on sodium deoxycholate for the isolation of intestinal pathogens and for the enumeration of colon bacilli in milk and water. - J. Path. Bact., 40; 581-599. (1935).
2. HYNES, M.: The isolation of intestinal pathogens by selective media. - J. Path. Bact., 54; 193-207. (1942).