SS AGAR, MODIFIED TM 588

For selective isolation & differentiation of *Salmonella* and *Shigella* species from clinical samples and foodstuff

Composition

Ingredients	Gms/Ltr.
Agar	12.00
Sodium citrate	10.00
Lactose	10.00
Sodium thiosulphate	8.50
Bile salts	5.50
Beef extract	5.00
Peptic digest of animal tissue	5.00
Ferric citrate	1.00
Neutral red	0.025
Brilliant green	0.00033

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

Instructions for Use

Dissolve 57.00gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. **DO NOT AUTOCLAVE**. Cool to 45 – 50°C and distribute into sterile petri plates. Allow the medium to solidify partially uncovered.

Appearance: Red orange in colour, clear to slightly opalescent gel
pH (at 25^{0}C): 7.2 ± 0.2

Principle

SS AGAR, MODIFIED is used for selective isolation & differentiation of *Salmonella* and *Shigella* species. This medium consists of Beef extract and Peptic digest of animal tissue provide nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Bile salts and Sodium citrate inhibit Gram-positive bacteria, most coliform bacteria and swarming *Proteus* spp., while allowing *Salmonella* spp to grow. Brilliant green and high concentrations of Sodium thiosulphate and citrate largely inhibit the accompanying microbial flora. Sulphide production is detected by using thiosulphate and iron ions, the colonies turn black. The presence of coliform bacteria is established by detecting degradation of lactose to acid with the pH indicator neutral red. Neutral red is the pH indicator. Non-lactose fermenting bacteria (supposed pathogens) produce clear colonies, transparent or colorless, while coliforms are sufficiently inhibited, and form small colonies that vary from pink to red in color. The plates of the medium can be kept for at least a week in refrigeration. This formulation, highly selective, is not recommended for the primary isolation of *Shigella*. Some *Shigella* spp. may be inhibited.

Interpretation

Cultural characteristics observed after inoculating (10^3CFU/ml), on incubation at 35 ± 2°C for 18 - 24 hours.

Microorganism	ATCC	Inoculum (CFU)	Observed (CFU)	Colour of colony	Standard Recovery (%)	Recovery on test media (%)
Escherichia coli	25922	85	21	Pink colonies with bile ppt.	20 - 30%	24%
Enterococcus faecalis	29212	90	08	Colourless colonies	<=10%	8%
Proteus mirabilis	25933	80	27	Colourless colonies with black centers	30 - 40%	34%
Shigella flexneri	12022	81	35	Colourless colonies	40 - 50%	43%
Salmonella typhimurium	14028	82	66	Colourless with black centers	>=50%	80%

References

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C. (2003).
2. Pub. Health Reports. 65:1075. Paper Read at Microbiological Congress, 1950. Proc. 22nd Ann. Meet. Northeastern Conf. Lab. (1950).
3. Workers in Pullorum Disease Control Burlington, Vermont, June 20-21. (1950).