

TECHNICAL SHEET

B048	TRIPLE SUGAR IRON AGAR				
Formula					
Ingredients:					
	gms/lit.				
Peptic digest of animal tissue	10.00				
Casein enzymic hydrolysate	10.00				
Yeast extract	3.00				
Meat Extract B#	3.00				
Lactose	10.00				
Sucrose	10.00				
Dextrose	1.00				
Sodium chloride	5.00				
Ferrous sulphate	0.20				
Sodium thiosulphate	0.30				
Phenol red	0.024				
Agar	12.00				
#- Equivalent to Beef extract					
Final pH (at 25°C) : 7.4 ± 0.2					
Directions:					
Suspend 64.52 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Mix well and distribute into test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the medium to set in sloped form with a butt about 1 inch long.					
Principle:					
Beef extract, Yeast extract, Peptic digest of animal tissue and Casein enzyme hydrolysate provide nitrogen, vitamins, and minerals. Triple sugar iron agar contains three carbohydrates (dextrose, lactose and sucrose). When these carbohydrates are fermented, the resulting production of acid is detected by the phenol red indicator. The colour changes that result are yellow for acid production and red for alkalinization. Sodium thiosulfate is reduced to hydrogen sulfide. Hydrogen sulfide then reacts with an iron salt yielding the typical black iron sulfide. Sodium chloride maintains the osmotic balance of the medium. Agar is a solidifying agent.					
QC Tests - (I) Dehydrated Medium					
Colour:	Light yellow to pink				
Appearance:	Homogeneous Free Flowing powder				
(II) Rehydrated medium					
PH (post autoclaving/heating):	7.4 ± 0.2				
Colour (post autoclaving/heating):	Pinkish red				
Clarity (post autoclaving/heating):	Clear to slightly opalescent				
(III) Q.C. Test Microbiological					
Cultural characteristics observed after 18 – 48 hrs. at 35- 37°C.					
MICROORGANISM (ATCC)	GROWTH	SLANT	BUTT	GAS	H ₂ S
Citrobacter freundii (8090)	Luxuriant	A	A	+	+
Enterobacter aerogenes (13048)	Luxuriant	A	A	+	-
Escherichia coli (25922)	Luxuriant	A	A	+	-
Escherichia coli (8739)	Luxuriant	A	A	+	-
Klebsiella pneumoniae (13883)	Luxuriant	A	A	+	-
Proteus vulgaris (13315)	Luxuriant	K	A	-	+
Salmonella paratyphi A	Luxuriant	K	A	+	-
Salmonella typhi (6539)	Luxuriant	K	A	-	+
Salmonella typhimurium (14028)	Luxuriant	K	A	+	+
Shigella flexneri (12022)	Luxuriant	K	A	-	-

TECHNICAL SHEET

Key : A = acidic, yellow K = alkaline, no change + = blackening (H ₂ S), positive reaction - = no reaction.					
Precautions :	1. For Laboratory Use.				
	2. Follow proper, established laboratory procedures in handling and disposing of infectious materials.				
Limitations :	1. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.				
	2. Hydrogen sulfide production may be evident on Kligler Iron Agar but negative on Triple Sugar Iron Agar. Studies by Bulmash and Fulton showed that the utilization of sucrose could suppress the enzymatic mechanisms responsible for H ₂ S production. Padron and Dockstader found that not all H ₂ S – positive Salmonella are positive on TSI.				
	3. Sucrose is added to TSI to eliminate some sucrose – fermenting non – lactose fermenters such as Proteus and Citrobacter spp.				
	4. Further biochemical tests and serological typing must be performed for definite identification and confirmation of organisms.				
	5. Do not use an inoculating loop to inoculate a tube of Triple Sugar Iron Agar. While stabbing the butt, mechanical splitting of the medium occurs, causing a false positive result for gas production.				
	6. A pure culture is essential when inoculating Triple Sugar Iron Agar. If inoculated with a mixed culture, irregular observations may occur.				
	7. Tubes should be incubated with caps loosened. This allows a free exchange of air, which is necessary to enhance the alkaline condition on the slant.				
Use :	For identification of gram-negative enteric bacilli on the basis of dextrose, lactose, sucrose fermentation and hydrogen sulphide production.				
Storage :	Dehydrated medium- below 30°C Prepared medium– Between 2 to 8°C.				
Packing :	500 gm. bottle				
Product profile:	Reconstitution	Quantity on Preparation (500g)	pH (25°C)	Supplement	Sterilization
B048	64.52g/l	7.749 L	7.4 ± 0.2	Nil	121°C /15 min.

Disclaimer:

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related BIOMARKLABORATORIES publications.

The information contained in this publication is based on our in-house studies and market performance and is to the best of our knowledge true and accurate. BIOMARK LABORATORIES reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.