TECHNICAL SHEET

B913	ACETATE DIFFERENTIAL AGAR
Formula	
Ingredients :	**gms/lit.**
Sodium acetate	2.00
Magnesium sulphate	0.10
Sodium chloride	5.00
Monoammonium phosphate	1.00
Dipotassium phosphate	1.00
Bromothymol blue	0.08
Agar	20.00
Final pH (at 25°C) : 6.7 ± 0.2	

Directions :

Suspend 29.18 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Distribute in tubes in sufficient amounts to give butt and slant. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubes to cool in a slanted position.

Principle :

Acetate Differential Agar was formulated by Trabulsi and Ewing (1). Tatum, Ewing and Weaver (2) modified the medium by replacing sodium citrate by sodium acetate, which enables the differentiation of Shigella species from E.coli. Organic acids have been used widely as an aid in the differentiation of Enterobacteriaceae, usually in formulae that contained organic nitrogen sources. Most bacteria, however, can use citrate and acetate in the presence of organic nitrogen. The differentiation of groups is based on the ability or failure of the test culture to utilize acetate in a medium devoid of trace organic nitrogen. This medium contains sodium acetate as the sole source of nitrogen. Trabulsi and Ewing demonstrated that Shigella and Proteus species are unable to utilize acetate and therefore fails to grow. Majority of E.coli and closely related organisms grow well within 24-48 hours but some strains grow very slowly and a few strains are unable to utilize acetate as a sole carbon source. Acetate utilization is indicated by formation of blue colour, which is due to the utilization of sodium acetate and subsequent formation of an alkaline reaction detected by the presence of bromothymol blur indicator. Some strains of E.coli utilize acetate slowly or not at all and therefore may produce a false negative reaction. Sodium acetate is utilized as a sole source of carbon by some serobiotypes of S.flexneri such as Shigella flexneri 4a.Magnesium sulphate is essential ion, sodium chloride maintains osmotic equilibrium and phosphates act as buffers.

QC Tests – (I)Dehydrated Medium				
	Colour :	Cream to greenish yellow		
	Appearance :	Homogeneous Free Flowing powder		
(II)Rehydrated medium				
	pH (post autoclaving/heating) :	6.7 ± 0.2		
	Colour (post autoclaving/heating) :	Emerald green		
	Clarity (post autoclaving/heating) :	Clear to slightly opalescent		
(III)Q.C. Test Microbiological				
	Cultural characteristics observed after an incubation at 25-30°C for upto 1-7 days.			
	MICROORGANISM (ATCC)	GROWTH	ACETATE UTILIZATION	
	Citrobacter freundii (8090)	Good –luxuriant	+	
	Enterobacter cloacae (23355)	Good –luxuriant	+	
	Escherichia coli (25922)	Good –luxuriant	+	
	Klebsiella pneumoniae (13883)	Good –luxuriant	+	
	Salmonella arizonae (13314)	Good –luxuriant	+	
	Salmonella typhi (19430)	Poor	-	
	Shigella sonnei (25931)	None-poor	-	
	Proteus vulgaris (13315)	Inhibited	-	
	Key : + = Colour change of the medium from green to blue - = No change, medium remains green			

Refer disclaimer Overleaf

Rev: December 2020

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.				
Use :	For the differentiation of Shigella from Escherichia coli.				
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
B913	29.18 g/l	17.13 L	6.7 $\pm$ 0.2	Nil	121^{0}C /15 min.