SKIM MILK AGAR TM 295

For cultivation and enumeration of bacteria encountered in diary industry

Composition

Ingredients	Gms/Ltr.
Skim milk	28.00
Agar	15.00
Casein enzymatic hydrolysate	5.00
Yeast extract	2.50
Dextrose	1.00

* Dehydrated powder store, in a dry place in tightly- sealed containers below 25^{0}C and protected from direct Sunlight.

Instructions for use

Dissolve 51.50gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Dispense into test tubes. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool to 45 – 50^{0}C and pour into sterile Petri plates.

Appearance: Off-white to beige, opaque
pH (at 25^{0}C): 7.0 ± 0.2

Principle

SKIM MILK AGAR is used for cultivation and enumeration of bacteria encountered in diary industry by demonstration of coagulation and proteolysis of casein. Skim Milk Agar, is used for the proteose production. Bacterial cells were spot inoculated and incubated for 2 days at 28°C. Proteolytic activities were identified by clear zone around the cells (Smibert and Krieg 1994). Skim milk agar plates are used to provide a nutritious medium for growing micro-organisms. Once prepared, the agar can be plated with a population of micro-organisms to test for the micro-organisms ability to digest casein protein. Casein enzymatic hydrolysate is a large insoluble protein found in skim milk. As it is digested by an organism's enzymes, casein is broken down into small amino acids and peptides. Clear patches on the agar pate indicate regions where casein has been broken down. Yeast extract is a source of vitamins in the medium. Dextrose provides the carbohydrate source. Agar is a solidifying agent. Skim milk agar is a relatively uncomplicated and inexpensive medium to use for an experiment like this.

Interpretation

Culture characteristics observed after inoculating 50 - 100 CFU, for incubation period of 18 – 24 hours at 35 - 37°C.

Microorganisms	ATCC	Inoculum (CFU)	Growth	Proteolytic activity
Enterococcus faecalis	29212	85	>=70%	Negative reaction, no clear zone around colonies
Clostridium perfringens	12919	78	>=70%	Positive reaction, clear zone around colonies
Escherichia coli	25922	81	>=70%	Negative reaction, no clear zone around colonies
Proteus mirabilis	25933	74	>=70%	Positive reaction, clear zone around colonies

References

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