HYA Agar

M601

HYA Agar is used for differentiation of *Lactobacillus bulgaricus* and *Streptococcus thermophilus* on the basis of colony morphology from yoghurt cultures.

Composition**

Ingredients	Gms / Litre
Beef extract	1.000
Proteose peptone	10.000
Dextrose	2.500
Galactose	2.500
Lactose	5.000
Agar	15.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 36 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Yoghurt is a fermentable milk product in which *Streptococcus thermophilus* and *Lactobacillus bulgaricus* are the essential microbial species and are active in a symbiotic relationship. The large number of media proposed for lactic acid bacteria, particularly for Streptococci and lactobacilli is indicative of the difficulties encountered in growing some strains of these organisms. The choice of medium is governed to some extent by the particular strains under study and therefore by products or habitat. In general, lactic acid bacteria are tolerant to low pH, they can be very sensitive to other adverse conditions. Samples to be examined for numbers of viable lactic acid bacteria should not be frozen prior to analysis (2).

Porubcan and Sellars (1) described this medium on which *L.bulgaricus* grow as diffuse, low mass colonies (2-10 mm in diameter) and *S.thermophilus* as discrete high mass colonies (1-3 mm in diameter). To obtain optimum consistency, flavour and odour, many investigators claim that the two species should be present in about equal numbers in the culture. Dominance by either species can cause defects. Because of the emphasis on maintaining balance between coccus and rods, techniques are needed to determine the relative proportion of *S.thermophilus* and *L.bulgaricus* when grown together in milk culture.

Differentiation of two species on HYA Agar is based on colony morphology. Also this media is recommended by APHA (2). Beef extract and proteose peptone provides necessary nitrogenous nutrients required for growth of two species. The sugars dextrose, galactose, lactose serve as energy sources.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 3.6% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH
6.60-7.00

Cultural Response
M601: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours .

Organism	Growth
Cultural Response	
Lactobacillus bulgaricus *ATCC 11842*	luxuriant
Streptococcus thermophilus *ATCC 14485*	luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

1.Porubcan R. S., and Sellars R. L., 1973, J. Dairy Sci., 56: 634.
2.Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

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