Technical Information

King's Medium B Base w/ 1.5% Agar

Product Code: DM 2544F

Application: - Kings Medium B Base w/ 1.5% Agar is recommended for the non-selective isolation, cultivation and pigment production of *Pseudomonas* species in accordance with FDA BAM, 1998

Composition**

Ingredients	Gms / Litre
Proteose peptone	20.000
Dipotassium hydrogen phosphate	1.500
Magnesium sulphate	1.500
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Pseudomonas aeruginosa is known to produce two types of pigments, pyocyanin and fluorescein which is a characteristic property and aids in its isolation from from clinical and food samples. An additional pigment entitled pyorubin was reported by King (1). Kings Medium B Base w/ 1.5% agar, recommended by FDA BAM is particularly suited for fluorescein production (2). Pyocyanin is green, fluorescein is fluorescent yellow and pyorubin is reddish brown in colour. Some strains produce all the three pigments while the others produce one or two. This medium can be used as a general medium for the non-selective isolation and pigment production of *Pseudomonas* species from foods, cosmetics etc (3). Proteose peptone, which supply carbon and nitrogen compounds for the growth of bacteria. Glycerol serves as a source of energy and also as an enhancer in pigment production. Magnesium sulphate also enhances pigment production. Pigments and/ or their derivatives produced by *Pseudomonas* species play a role as siderophores in the iron uptake systems of bacteria, and hence, their production is markedly enhanced under conditions of iron deficiency. The production of pigments especially non-fluorescent blue pigment, pyocyanin is readily demonstrated by culturing on Kings Medium B Base w/ 1.5% Agar, which contains no added iron (4). The addition of dipotassium phosphate increases the phosphorus content of the medium thereby enhancing production of fluorescent pigment.

Methodology

Suspend 38.00 grams of dehydrated powder media in 1000 ml distilled water containing 10 ml of glycerol. Mix thoroughly & heat to boil to dissolve the medium completely. Mix well. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Aseptically pour into sterile Petri plates.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity
Light yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 3.8% w/v aqueous solution (containing 1.0 %v/v glycerol) at 25°C. pH : 7.2±0.2

pH Range
7.00-7.40

Cultural Response
DM2544F: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Pigment production
Cultural Response				
Pseudomonas aeruginosa ATCC 17934	50-100	good-luxuriant	>=70%	greenish yellow
Pseudomonas aeruginosa ATCC 27853	50-100	good-luxuriant	>=70%	greenish yellow
Pseudomonas aeruginosa ATCC 9027	50-100	good-luxuriant	>=70%	greenish yellow
Burkholderia cepacia ATCC 25609	50-100	good-luxuriant	>=70%	no pigment

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. King, E. O, M. K Ward, and D. E Raney. 1954. J. Lab and Clin. Med 44: 301-307.
2. FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
3. Ann, G, and Matthysse. 1998. The Genus Agraobacterium. The Prokaryotes 3 ed.
4. Todar K., Todars Online Textbook of Bacteriology, University of Wisconsin -Madison, Department of Bacteriology.

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