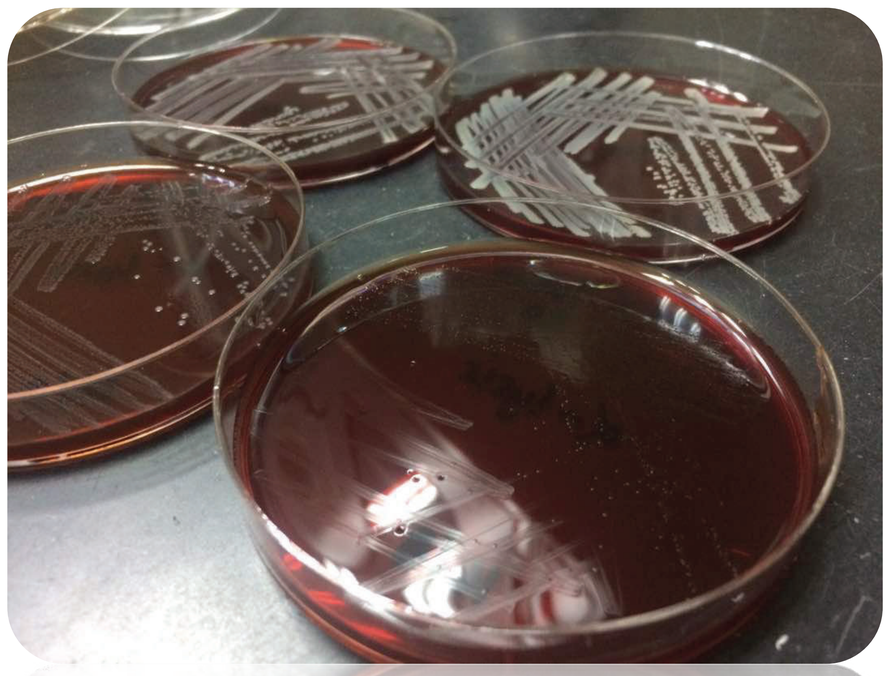
Putra Amazing Agar

PATENT NO. PI2019007547



BRIEF TECHNOLOGY

Tween 80-incorporated agar that promotes the growth of organisms causing infections, from sterile body fluid samples

PROBLEM STATEMENT & CURRENT ISSUES

- It is essential to isolate microorganisms causing infections to ensure timely and accurate patient management.
- Currently, lab experts in most microbiology diagnostic laboratories face challenges to grow microorganisms from standard agar used in laboratories, usually known as culture negative.
- Culture negative rate is high among the kidney disease patients that undergo continuous ambulatory peritoneal dialysis (CAPD) with peritonitis.
- Due to this issue, patients will have prolonged infections, secondary infections resulting in high medical costs even death due to infections.

INVENTIVENESS & NOVELTY

- This technology shows better yield of microorganisms that cause infections, than the currently used agar. This agar also has the potential to be a cheaper alternative to the blood culture bottle system that laboratories use to overcome the challenges in growing microorganisms. In this regard, only some laboratories can afford the blood culture system.

Table 1

Comparison of Different Methods to Detect Etiological Agents in All Peritonitis Cases*

Method	Positive culture *n* (%)	Negative culture *n* (%)	Total *n*
Direct culture	7 (15.5%)	38 (84.5%)	45
BACTEC system	36 (80%)	9 (20%)	45
WBC lysis by Triton X	37 (82.2%)	8 (17.8%)	45
Sedimentation	36 (80%)	9 (20%)	45
Blood agar with 2% Tween 80	37 (82.2%)	8 (17.8%)	45

WBC = white blood cell.
* $p<0.001$.

Table 2

Cost Effectiveness of Different Methods

Method	Cost (US$)
Direct culture	5
WBC lysis by Triton X	5.6
BACTEC alert system	13.3
Sedimentation method	5.3
Blood agar with 2% Tween 80	3.3

WBC = white blood cell.

USEFULNESS & APPLICATION

Putra Amazing Agar is a ready-to-use agar. The clinical sample is directly cultured onto the agar, followed by incubation up to 2 days to grow microorganisms that cause infections.

IMPACT OF THE PRODUCT

Early detection of microorganisms gives various benefits to patients:

- Prompt and efficient treatment
- Reduce patient stay in the hospital
- Avoid removal of the access for patient dialysis
- Lower the risk of secondary infection
- Save medical cost for patient management

MARKET POTENTIAL

Hospital Diagnostic Laboratories
- Isolate microorganisms from body fluid samples

Research Laboratories
- Isolate microorganisms for research purposes

TRL : 6 - Demonstration in real environment

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