

TM 2268 – PKU TEST AGAR W/ THIENYLALANINE

INTENDED USE

For estimation of phenylalanine in blood for detection of Phenylketonuria (PKU).

PRODUCT SUMMARY AND EXPLANATION

Phenylketonuria is a congenital defect caused due to absence of phenylalanine hydroxylase. As a result of this, phenylalanine accumulates in the blood, which is excreted via urine hence it is called as phenylketonuria. Subsequently this deficiency may cause brain damage resulting in mental retardation. Guthrie and Tiekelmann devised a modified inhibition assay for early detection of PKU using blood / urine samples of newborn infants having low levels of phenylalanine by determining the serum phenylalanine levels or the level of phenylpyruvic acid in urine.

COMPOSITION

Ingredients	Gms / Ltr		
L-Glutamic acid	0.500		
DL-Alanine	0.500		
Asparagine	0.500		
Dextrose	10.000		
Dipotassium phosphate	15.000		
Monopotassium phosphate	5.000		
Ammonium chloride	2.500		
Ammonium nitrate	0.500		
Sodium sulphate	0.500		
Magnesium sulphate	0.050		
Manganese chloride	0.005		
Ferric chloride	0.005		
Calcium chloride	0.0025		
ß-2-Thienylalanine	0.0033		
Agar	15.000		

PRINCIPLE

This medium consists of Dextrose which act as an energy source. Magnesium sulphate, manganese chloride, ferric chloride, calcium chloride serves as a source of ions. The amino acids present act a source of nitrogen in the medium. Phosphate buffers the medium. Agar act as a solidifying agent.

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INSTRUCTION FOR USE

• Dissolve 50.06 grams in 1000 ml purified/distilled water.



- Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT.
- Cool to 50°C and add *Bacillus subtilis* spores.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to greenish yellow homogeneous free flowing powder.			
Appearance of prepared medium	: Light yellow coloured clear to slightly opalescent gel forms in Petri plates.			
pH (at 25°C)	: 7.0 ± 0.2			

INTERPRETATION

Cultural characteristics observed after incubation.

Microorg anism	ATC C	Inocul um (CFU/ ml)	Grow th w/ 2% Phen ylala nine	Growt hw/ 4% Phenyl alanin e	Growt hw/ 6% Phenyl alanin e	Growt hw/ 8% Phenyl alanin e	Growt h w/ 10% Phenyl alanin e	Growt h w/ 12% Phenyl alanin e	Recov ery	Incubati on Temper ature	Incubat ion Period
Bacillus subtilis	663 3	50- 100	None -poor	Luxuria nt	Luxuria nt	Luxuria nt	Luxuria nt	Luxuria nt	>=70%	35-37°C	12-16 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

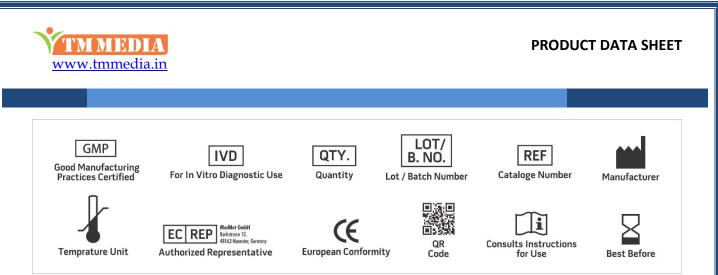
DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- 1. Demain A. L., 1958, J. Bacteriol., 75:517.
- 2. Guthrie R., 1961, J. Am. Med. Assoc., 178:863.
- 3. Guthrie R. and Tiekelmann H., 1960, London Conference on the Scientific study of Mental Deficiency, London.
- 4. Guthrie R. and Susi A., 1963, Pediatrics, 32:338.





NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices. *For Lab Use Only

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