78052 Phenylalanine Agar

Test medium for detecting phenylalanine deaminase, for the identification of *Proteus* and *Providencia* alongside other Enterobacteriaceae acc. to Ewing et al. (1957).

Composition:

Ingredients	Grams/Litre
Yeast extract	3.0
DL-Phenylalanine	2.0
Disodium hydrogenphosphate	1.0
Sodium chloride	5.0
Agar	12.0
Final pH (at 25 °C) 7.3 ± 0.2	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:
Dissolve 23 g in 1 litre distilled water. Sterilize by autoclaving at 121°C for 15 minutes.

Principle and Interpretation:
Phenylalanine Agar is a modification of the medium developed by Ewing et al (1). Organisms like *Proteus*, *Morganella* and *Providencia* species have the ability to deaminate phenylalanine to phenylpyruvic acid (2).
This test is important for the determination of the taxonomy of Enterobacteriaceae.
Yeast extract provides the necessary nutrients and cofactors required for excellent growth of the organisms. Disodium hydrogenphosphate is the buffering agents and sodium chloride is included to provide a suitable osmotic environment. Agar is the solidifying agent.
DL-Phenylalanine serves as substrate for enzymes that are able to oxidatively deaminate it to phenylpyruvic acid. If green color appears after adding a few drops of 10% aqueous ferric chloride to the colony the organism is positive (deaminate DL-Phenylalanine). No color change means no deamination. Interpret the reaction within 5 minutes upon reagent because the color bleaches quickly.

Cultural characteristics after 18-24 hours at 35°C.

Organisms (ATCC)	Growth	Phenylalanine deaminase
Enterobacter aerogenes (13048)	+++	-
Escherichia coli (25922)	+++	-
Proteus vulgaris (13315)	+++	+
Proteus mirabilis (25933)	+++	+
Providencia alcalifaciens (12013)	+++	+

References:
1. W.H. Ewing, B.R. Davis, R.W. Reavis, Public. Health Lab., 15, 153 (1957)
2. Henrikson, J. Bact., 60, 225 (1950)
3. J. Singer, B.E. Volcani, An improved ferric chloride test for differentiating Proteus-Providence group from other Enterobacteriaceae, J. Bacteriol., 69, 255 (1955)
4. P.R. Edwards, W.H. Ewing, Identification of Enterobacteriaceae, 3rd ed., Burgess Publishing, Minneapolis (1972)
5. E.H. Lennette, A. Ballows, W.J. Jr. Hausler, H.J. Shadomy, Manual of Clinical Microbiology., 4th ed., Washington D.C.: American society for Microbiology (1985)
6. J.F. Mac Faddin, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Baltimore, MD. Williams & Wilkins. (1985)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.