

# Pseudomonas Agar P, Base

Elective culture media proposed by KING, WARD and RANEY (1954) for the isolation and differentiation of *Pseudomonas* based on the formation of pyocyanin and/or pyorubin or fluorescein.

This media comply with the recommendations of the United States Pharmacopeia XXVI (2003) and correspond to the culture media specified in the DIN Norm 38411 (examination of water).

## Mode of Action

*Pseudomonas* Agar P favours the formation of pyocyanin and/or pyorubin and reduces that of fluorescein, whereas *Pseudomonas* Agar F stimulates the production of fluorescein and reduces that of pyocyanin and/or pyorubin. Simultaneous use of both culture media allows rapid, preliminary identification of most *Pseudomonas* species, as some strains can only synthesize pyocyanin, some form only fluorescein and others produce both pigments.

## Typical Composition (g/litre)

Peptone 20.0; magnesium chloride 1.4; potassium sulfate 10.0; agar-agar 12.6.

### Also to be added:

glycerol 10.0 ml.

## Preparation

Suspend 10.0 ml glycerol/litre together with 44 g *Pseudomonas* Agar P Base/litre, dispense into test tubes if desired, autoclave (15 min at 121 °C). Make slant tubes or pour plates.

pH: 7.2 ± 0.2 at 25 °C.

The plates are yellowish-brown (1.10989).

## Experimental Procedure and Evaluation

Inoculate the surface of the culture medium with cultures suspected to contain *Pseudomonas* so that individual colonies develop.

Incubation: up to 7 days at 35 °C.

Check for bacterial growth after 24, 48 and 72 hours and then after 6 days.

*Pseudomonas aeruginosa* can grow on *Pseudomonas* Agar P to form colonies surrounded by a blue to green zone due to pyocyanin formation or with a red to dark brown zone due to pyorubin production. The coloured pigments can be extracted with chloroform.

According to BLAZEVIC et al. (1973), atypical pyocyanin-negative, fluorescein-positive *Ps. aeruginosa* strains can be differentiated from *Ps. fluorescens* and *Ps. putida*. BRODSKY and NIXON (1973) reported that the fluorescence of *Ps. aeruginosa* colonies in ultra-violet light following growth on MacCONKEY agar can be exploited to provide a rapid orientation test, *Ps. fluoresce* and *Ps. putida* do not fluoresce and show only scanty growth.

## Literature

BLAZEVIC, D.J., KOEPCKE, M.H., a. MATSEN, J.M.: Incidence and identification of *Pseudomonas fluorescens* and *Pseudomonas putida* in the clinical laboratory. – **Appl. Microbiol.**, **25**: 107-110 (1973).

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DIN Deutsches Institut für Normung e.V.: Deutsche Einheitsverfahren zur Wasser-, Abwasser und Schlammuntersuchung. Mikrobiologisches Verfahren (Gruppe K). Nachweis von *Pseudomonas aeruginosa* (K 8). – **DIN 38411**.

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KING, E.O., WARD, M.K., a. RANEY, D.E.: Two simple media for the demonstration of pyocyanin and fluorescein. – **J. Lab. Clin. Med.**, **44**: 401-307 (1954). United States Pharmacopeia XXVI, Chapter "Microbial Limit Tests", 1995.

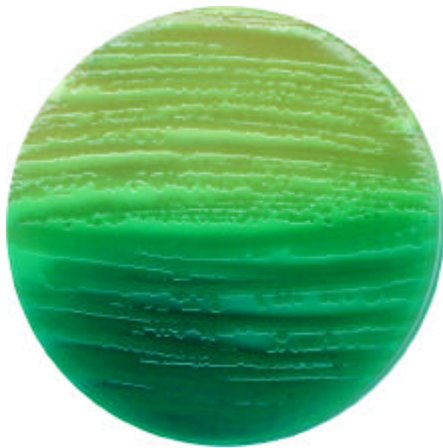
## Ordering Information

Product	Merck Cat. No.	Pack size
<i>Pseudomonas</i> Agar P, Base	1.10988.0500	500 g
Glycerol	1.04091.0500	500 ml
UV Lamp (366 nm)	1.13203.0001	1 ea

# Pseudomonas Agar P, Base

## Quality control

Test strains	Growth	Blue-green pigment in day-light
<i>Pseudomonas aeruginosa</i> ATCC 27853	good / very good	(+)
<i>Pseudomonas aeruginosa</i> ATCC 9027	good / very good	+
<i>Pseudomonas aeruginosa</i> ATCC 25668	good / very good	+
<i>Pseudomonas fluorescens</i> ATCC 13535	good / very good	- (yellowish)
<i>Aeromonas hydrophila</i> ATCC 7966	good / very good	-
<i>Escherichia coli</i> ATCC 25922	good / very good	-
<i>Enterobacter cloacae</i> ATCC 13047	good / very good	-



*Pseudomonas aeruginosa* ATCC 27853 und  
*Pseudomonas aeruginosa* ATCC 8027



*Pseudomonas fluorescens* ATCC 13535 und  
*Pseudomonas aeruginosa* ATCC 25668