

Arginine Broth acc. to SCHUBERT

Arginine Brilliant-green Glucose Peptone Broth (ABGP Medium)

Enrichment broth for chlorine damaged *Pseudomonas aeruginosa* within the testing of swimming pool water acc. to bathingwater commission of "Umweltbundesamt" (German Authority for the Environment).

Mode of Action

The rich nutrient base of this medium allows best growth conditions.

Brilliant-green inhibits the accompanying Gram-positive flora. The concentration of brilliant-green has no toxic effect on preinjured *Pseudomonas aeruginosa*.

A colour change from grey-green to blue-violet indicates the presence of *Ps. aeruginosa* allowing a presumptive information about the presence of *Ps. aeruginosa*.

The indicator system is based on the strong alcalisation of Arginine in the presence of *Ps. aeruginosa*. In combination with bromothymolblue and cresolred the colour changes to blue-violet.

Typical Composition (g/litre)

Peptone from casein 17.0; peptone from soymeal 3.0; L-argininemonohydrochloride 10.0; bromothymolblue 0.015; cresolred 0.02; brilliant-green 0.00038; D(+)glucose 0.5; sodium chloride 5.0.

Preparation

Suspend 35.5 g in 1 litre demin. water, dispense into test tubes and autoclave (15 min at 121 °C).

pH: 7.0 ± 0.2 at 25 °C.

FOR ENVIRONMENTAL WATER SAMPLES ONLY:

For the inhibition of the accompanying flora it is recommended to add 1 ml of nalidixic acid solution (dissolve 5 mg nalidixic acid in 1 ml demin. water) to the medium at a temperature of 45-50 °C. Homogenize by gently shaking.

(Do **not** add nalidixic acid solution to chlorinated water sample!)

The prepared broth is clear and grey-green.

Experimental Procedure and Evaluation

Membrane filter method:

100 ml water sample is filtered through a membrane filter which is then immersed into 15-20 ml of Arginine Broth.

Direct Enrichment:

Suspend 100 ml water sample into 100 ml of double strength Arginine Broth.

Incubation: 48 h aerobically at 35 °C.

A colour change to violet is an indication for the presence of *Pseudomonas aeruginosa*.

For confirmation streak onto selective agars, e.g. methods acc. to DIN 38411, part 8.

Literature

SCHUBERT, R.: The use of Arginine Brilliant Green Glucose Peptone Broth (ABGP Medium) as a Primary Culture Medium for *Pseudomonas aeruginosa*. - **Zbl. Bakt. Hyg. B 187**; 266-268 (1989).

Mitteilung der Badewasserkommission des Umweltbundesamtes: Hygienische Überwachung öffentlicher und gewerblicher Bäder durch die Gesundheitsämter. - **Bundesgesundheitsblatt 4/96**.

Ordering Information

Product	Merck Cat. No.	Pack size
Arginine Broth acc. to SCHUBERT	1.13892.0500	500 g
DEV ENDO Agar	1.10684.0500	500 g
MacCONKEY Agar	1.05465.0500	500 g
Neßler's reagent	1.09029.0100	100 ml
<i>Pseudomonas</i> Agar F, Base	1.10989.0500	500 g
<i>Pseudomonas</i> Agar P	1.10988.0500	500 g



- 1 2 *Pseudomonas aeruginosa*
- 3 Negative control
- 4 *Enterococcus faecalis*
- 5 *E. coli*

Quality control

Test strains	Growth	Colour change to violet
<i>Pseudomonas aeruginosa</i> ATCC 27853	good / very good	+
<i>Pseudomonas aeruginosa</i> ATCC 9027	good / very good	+
<i>Pseudomonas stutzeri</i> ATCC 17832	none	-
<i>Aeromonas hydrophila</i> ATCC 7966	good / very good	+
<i>Enterococcus faecalis</i> ATCC 19433	none	-
<i>Escherichia coli</i> ATCC 25922	good / very good	+ / - (yellow after 24h)