

GSP Agar (Pseudomonas Aeromonas Selective Agar Base) acc. to KIELWEIN

Medium proposed by KIELWEIN (1969, 1971) for detecting *Pseudomonas* and *Aeromonas* in foodstuffs as well as in wastewater and equipment of the food industry.

Mode of Action

This glutamate starch phenol-red agar contains glutamate and starch as its sole nutrients. Many accompanying microorganisms cannot metabolize these compounds (STANIER et al. 1966). Starch is degraded by *Aeromonas* with acid production causing phenol red to change the yellow, but not by *Pseudomonas*. The selective inhibitors penicillin and, if desired, the antimycotic pimarinic are added to the medium to improve its selectivity.

Typical Composition (g/litre)

Sodium L(+)-glutamate 10.0; starch, soluble 20.0; potassium dihydrogen phosphate 2.0; magnesium sulfate 0.5; phenol red 0.36; agar-agar 12.0

Also to be added:

penicillin G 100,000 IU; if required pimarinic 0.01.

Preparation

Suspend 45 g/litre, autoclave (15 min at 121 °C), cool to 45-50 °C. Add 100,000 IU sodium penicillin g/litre and, if required, 0.01 g pimarinic/litre, mix and pour plates.

pH: 7.2 ± 0.2 at 25 °C.

The plates are clear and red.

Experimental Procedure and Evaluation

Inoculate by spreading the sample material on the surface of the plates.

Incubation: up to 3 days at approx. 28 °C aerobically.

Appearance of Colonies	Microorganisms
Large, diameter of 2-3 mm, blue-violet, surrounded by a red-violet zone	<i>Pseudomonas</i>
Large, diameter of 2-3 mm, yellow, surrounded by a yellow zone	<i>Aeromonas</i>
Usually small, delayed growth, sometimes mucoid	Enterobacteriaceae and others

Literature

KIELWEIN, G., GERLACH, R., u. JOHNE, H.: Untersuchungen über das Vorkommen von *Aeromonas hydrophila* in Rohmilch. - **Arch. f. Lebensmittelhyg.**, **20**: 34-38 (1969).

KIELWEIN, G.: Ein Nährboden zur selektiven Züchtung von *Pseudomonaden* und *Aeromonaden*. - **Arch. f. Lebensmittelhyg.**, **20**: 131-133 (1969).

KIELWEIN, G.: *Pseudomonaden* und *Aeromonaden* in Trinkmilch: Ihr Nachweis und ihre Bewertung. - **Arch. f. Lebensmittelhyg.**, **22**: 15-19 (1971).

KIELWEIN, G.: die Isolierung und Differenzierung von *Pseudomonaden* aus Lebensmitteln. - **Arch. f. Lebensmittelhyg.**, **22**: 29-37 (1971).

STANIER, R.Y., PALLERONI, N.J., a. DOUDOROFF, M.: The aerobic *Pseudomonas* - a taxonomic study. - **J. Gen. Microbiol.**, **42**: 159-271 (1966).

Ordering Information

Product	Merck Cat. No.	Pack size
GSP Agar (<i>Pseudomonas</i> <i>Aeromonas</i> Selective Agar Base) acc. to KIELWEIN	1.10230.0500	500 g
Pimarinic	1.07360.0001	1 g
Penicillin G potassium salt	CN Biosciences	

Quality control

Test strains	Growth	Colour change to
<i>Pseudomonas aeruginosa</i> ATCC 27853	good / verygood	red-violet
<i>Pseudomonas aeruginosa</i> ATCC 9027	good / verygood	red-violet
<i>Pseudomonas aeruginosa</i> ATCC 10145	fair / good	red-violet
<i>Aeromonas hydrophila</i> ATCC 7966	good	yellow
<i>Aeromonas caviae</i> ATCC 15468	good	yellow
<i>Escherichia coli</i> . ATCC 25922	none / poor	-
<i>Staphylococcus aureus</i> ATCC 25923	none	
<i>Citrobacter freundii</i> ATCC 8090	none / fair	