91019 Schaedler Agar (Schaedler Anaerobe Agar) NutriSelect® plus

Schaedler Agar is used for the enumeration of various aerobic and anaerobic bacterial species present in the gastrointestinal tract.

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	5.67
Proteose peptone	5.0
Papaic digest of soyabean mean	1.0
Yeast extract	5.0
Dextrose	5.83
Sodium chloride	1.67
Dipotassium hydrogen phosphate	0.83
Tris hydroxymethyl aminomethane	3.0
L-Cystine	0.40
Hemin	0.010
Agar	15.0

Final pH 7.6 +/- 0.2 at 25°C

Store dehydrated powder between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Protect from moisture and light by keeping container in a low humidity environment. Use before expiry date on the label.

Appearance(color): Faint Yellow & faint beige & faint brown, Free flowing powder
Gelling: Firm, comparable with 1.5% Agar gel.
Color and Clarity: Light amber coloured clear to slightly opalescent gel forms in Petri plates

Directions:
Suspend 43.41 grams in 950 ml distilled water. Heat to boiling with frequent agitation to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool and add 5% sterile defibrinated blood if desired. Mix well before dispensing. Avoid overheating and photo oxidation of the medium, as it will retard the growth of bacteria.

Principle and Interpretation:
Schaedler, Dubos and Costello (1)formulated this medium for the isolation of aerobic and anaerobic micro-organisms from the gastro-intestinal tract of mice. Mata, Carrillo and Villatoro (2) modified the formula in their studies on anaerobic human faecal microflora. Schaedler Agar supplemented with Vitamin K1 and 5% sheep blood is used for the recovery of fastidious anaerobic bacteria such as *Bacteroides*. Inclusion of Colistin and Nalidixic acid in the formulation (Schaedler CNA Agar) along with 5% sheep blood is used for the selective isolation of the anaerobic gram-positive cocci (3), *Peptococcus* and *Peptostreptococcus* species. Inclusion of Kanamycin and Vancomycin in the formulation (Schaedler KV Agar) along with 5% sheep blood is used for selective isolation of gram-negative anaerobes.
Schaedler Anaerobe Agar has been shown to be a suitable alternative to blood agar for the enumeration of *clostridia* (4) and has been used for the examination of food, waste products and ditch water (5).

The combination of casein hydrolysate, proteose peptone and soya peptone, yeast extract and L-cystine provide nitrogenous growth factors, vitamins and other essential growth nutrients. Dextrose serves as energy source. Hemin and sheep blood stimulates the growth of fastidious microorganisms and stimulates growth of other *Bacteroides* species and gram-positive spore formers (6). Addition of Sodium Polyanethol Sulphonate (SPS) is recommended when using this medium for blood culture (7). It inhibits phagocytosis and neutralizes the antibacterial activity of fresh blood components (9,10). Vitamin K1 enables the cultivation of *Bacteroides melaninogenicus* (8) and stimulates growth of other Bacteroides species and gram-positive spore formers (6).

Cultural characteristics observed under anaerobic conditions after an incubation of 18-48 hours at 35-37°C.

Organisms (ATCC/WDCM)	Inoculum (CFU)	Growth	Recovery
Streptococcus pyogenes (19615/ -)	50-100	+++	≥50%
Bacteroides fragilis (25285/-)	50-100	+++	≥50%
Clostridium sporogenes (13732/-)	50-100	+++	≥50%
Clostridium perfringens (12924/-)	50-100	+++	≥50%
Clostridium sporogenes (11437/-)	50-100	+++	≥50%
Escherichia coli (25922/00013)	$\geq 10^4$	-	0%

References:

1. Schaedler R. W., Dubos R. and Castello R. (1965) J. Exp. Med. 122. 59-66.
2. Mata L. J., Carrillo C. and Villatoro E. (1969) *Appl. Microbiol*. 17. 596-599.
3. Estevez, 1984, Lab Med., 15:258
4. de Waart J. and Pouw H. (1970) *Zbl. I. Abt. 0rig*. 214. 551-552
5. de Waart J. (1973) *Personal Communication*.
6. Finegold et al, 1974, Manual of Clinical Microbiology, 2nd ed., Lennette and others (Eds.), ASM, Washington, D.C
7. Rosner, 1968, Am. J. Clin. Pathol., 49:216.
8. Gibbons R. J. and MacDonald J. B., 1960, J. Bacteriol., 80:164.
9. Garrod, 1966, J. Pathol. Bacteriol., 91:621.
10. Lowrence and Traub, 1969, Appl. Microbiol., 17:839.

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.