

Product Information

86558 Buffered Charcoal Yeast Extract Agar, Base (BCYE Agar, Base; Legionella BCYE Agar, Base)

For selective cultivation of *Legionella* species.

Composition:

Ingredients	Grams/Litre
Yeast extract	10.0
Charcoal activated	2.0
ACES buffer	10.0
α-Ketoglutarate monopotassium salt	1.0
Agar	17.0
Final pH (at 25°C) 6.9 +/- 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.

Appearance: Grey to black coloured, homogeneous, free flowing powder.
 Gelling : Firm
 Color and Clarity: Grey-black to bluish-black coloured, opalescent gel forms in petri plates.

Directions:

Suspend 20 g in 500 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C. Aseptically add sterile rehydrated content of supplements. Mix well and pour with constant stirring to ensure that charcoal particles get evenly distributed.

Supplements:

Legionella MWY Selective Agar: 2 v/l Legionella Supplement (Twin Pack; Cat. No. 89166) + 2 v/l Legionella Selective Supplement IV (Cat. No. 94029)
 Legionella GVPN Selective Agar: 2 v/l Legionella (GVPN) Selective Supplement (Cat. No. 43509) + 2 v/l Legionella Supplement (Twin Pack; Cat. No. 89166)
 Legionella GVPC Selective Agar: 2 v/l Legionella (GVPC) Selective Supplement (Cat. No. 61025) + 2 v/l Legionella Supplement (Twin Pack; Cat. No. 89166)

Supplement content (per vial sufficient for 500 mL)	Legionella Supplement (Cat. No. 89166)	Selektive Supplement IV (Cat. No. 94029)	GVPN (Cat. No. 43509)	GVPC (Cat. No. 61025)
L-Cysteine hydrochloride	200 mg			
Ferric pyrophosphate, soluble	125 mg			
Polymyxin B sulphate		25'000 Units	40'000 IU	39600 IU
Glycine		1.5 g	1.5 g	1.5 g
Anisomycin		40 mg		
Vancomycin		0.5 mg	0.5 mg	0.5 mg
Natamycin			20 mg	
Cycloheximide				40 mg
Bromo thymol blue		5 mg		
Bromo cresol purple		5 mg		

Principle and Interpretation:

Buffered Charcoal Yeast Extract Agar (BCYE) was developed by Feeley et al. (1) and then further modified by Edelstein (2) for selective cultivation of *Legionella* species. They have very special requirements to the growth media. Yeast Extract provides sources of nitrogen, carbon, and vitamins in BCYE Agar. Activated Charcoal decomposes hydrogen peroxide and other toxic products. ACES Buffer was added to formulation to get a stable pH for optimal growth. α -Ketoglutarate stimulates organism growth. Agar is the solidifying agent. L-Cysteine, in the supplement, is an essential amino acid and an important energy source for *Legionella* species. Ferric pyrophosphate, present in the supplement, is the iron source.

Cultural characteristics after 3-4 days at 35-37°C in 90% humid atmosphere.

Organisms (ATCC)	Growth	Color of Colony
<i>Escherichia coli</i> (25922)	-/+	-
<i>Legionella dumoffii</i> (33343)	+++	light blue-grey
<i>Legionella pneumophila</i> (33153)	+++	white grey to blue grey
<i>Staphylococcus epidermidis</i> (12228)	-/+	-

References:

1. J.C. Feeley, R.J. Gibson, G.W. Gorman, N.C. Langford, J.K. Rasheed, D.C. Mackel, W.B. Baine, Charcoal-yeast extract agar: primary isolation medium for *Legionella pneumophila*, J. Clin. Microbiol., 10(4), 437-441 (1979)
2. P.H. Edelstein, Improved semiselective medium for isolation of *Legionella pneumophila* from contaminated clinical and environmental specimens. J. Clin. Microbiology, 14, 298-303 (1981)
3. C.A. Bopp, J.W. Summer, G.K. Morris, J.G. Wells, Isolation of *Legionella* spp. from environmental water samples by low-pH treatment and use of a selective medium, J. Clin. Microbiol., 13, 714-719 (1981)
4. R.M. Vickers, A. Brown, G.M. Garrity, Dye-containing buffered charcoal-yeast extract medium for differentiation of members of the family Legionellaceae, J. Clin. Microbiol., 13(2), 380-382 (1981)
5. ISO 11731:1998, Water quality -- Detection and enumeration of *Legionella*
6. ISO 11731-2:2004, Water quality -- Detection and enumeration of *Legionella* -- Part 2: Direct membrane filtration method for waters with low bacterial counts

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.