Dehydrated Culture Media

AZIDE BLOOD AGAR

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BASE

Code: CM0259

A selective medium for the detection and isolation of streptococci and staphylococci from faeces, sewage and other specimens. With added blood the medium may be used for the determination of haemolytic reactions.

Typical Formula*

	gm/litre
Tryptose	10.0
`Lab-Lemco' powder	3.0
Sodium chloride	5.0
Sodium azide	0.2
Agar	12.0

pH 7.2 ± 0.2 @ 25°C

*** Adjusted as required to meet performance standards**

Directions
Suspend 30g in 1 litre of distilled water and bring to the boil to dissolve completely. Sterilise by autoclaving at 121°C for 15 minutes. For azide blood agar, cool to 45-50°C and add 5% of sterile blood.

Description
A selective medium for the detection and isolation of streptococci from faeces, sewage, and other specimens containing a mixed flora. Azide Blood Agar Base is similar to the medium used by Edwards[1] for the isolation of mastitis streptococci. Sodium azide has a bacteriostatic effect on most Gram-negative organisms but permits growth of Gram-positive organisms such as *streptococci* and some strains of *staphylococci*. *Proteus* species are slightly more resistant than other Enterobacteriaceae but swarming is prevented (Snyder and Lichstein[2], Lichstein and Snyder[3]). At the concentration and pH used, sodium azide exerts no appreciable effect on haemolysis so that the medium, with added blood, may be used for the simultaneous determination of haemolytic reactions.

Azide blood agar is recommended by the American Public Health Association[4] for the isolation of *streptococci* from cheese. The plates, inoculated with dilutions of emulsified cheese, are incubated at 35°C and representative colonies subcultured for subsequent identification.
There are variations in formula of Azide Blood Agar Base which have been recommended for different purposes:

1. Packer[5] increased the sodium azide concentration to 0.9g per litre and added 0.002g per litre of crystal violet. The pH was also adjusted to 6.8 ± 0.1. This is a more selective medium for faecal streptococci in foods[6].

2. Packer[5] and Wood[7] used the above formulation with 5% blood and crystal violet increased at 0.01g per litre, for the isolation of *Erysipelothrix rhusiopathiae* and *Streptococcus pneumoniae*.

3. Dale[8] and Bohm[9] recommended the addition of phenol (1.0 to 2.5g per litre) to Packer's formulation to isolate *Erysipelothrix rhusiopathiae*.

Storage conditions and Shelf life
Store the dehydrated medium at 10-30°C and use before the expiry date on the label.
Store prepared blood agar plates of medium at 2-8°C.

Appearance
Dehydrated medium: Straw coloured, free-flowing powder
Prepared medium: Straw coloured gel

Quality control

Positive controls: Expected results
Enterococcus faecalis ATCC® 29212 * Good growth; white/grey colonies
Staphylococcus aureus ATCC® 25923 * Good growth; white colonies
Negative controls:
Proteus hauseri ATCC® 13315 * Inhibited
Escherichia coli ATCC® 25922 * Inhibited

*** This organism is available as a Culti-Loop®**

Precautions

Proteus and *Escherichia* species may not always be inhibited on the Edward's formulation.
Always use a light inoculum for best selective results.
Anaerobic incubation will enhance haemolytic reactions.
Haemolytic reactions will not be typical on Packer's modification of Azide Blood Agar Base.
Streptococcus lactis will not grow on Packer's modification with 5% sheep blood.
Read the section on Hazard Precautions for azide-containing media.

References

1. Edwards S. J. (1933) *J. Comp. Path. Therap*. 46(4) 211-217.
2. Snydar M. L. and Lichstein H. C. (1940) *J. Infect. Dis*. 67(2) 113-115.
3. Lichstein H. C. and Snyder M. L. (1941) *J. Bact*. 42(5) 653-664.
4. American Public Health Association (1978) *Standard Methods for the Examination of Dairy Products*. *14th Edn*. *APHA Inc. New York*.
5. Packer R. A. (1943) *J. Bact*. 46. 343-349.
6. Mossel D. A. A., Diepen H. M. J. van and De Bruin A. S. (1957) *J. Appl. Bact*. 20(2) 265-272.
7. Wood R. L. (1965) *Amer. J. Vet. Res*. 26. 1303-1308.
8. Dale C. N. (1940) *J. Bact*. 40. 228-231.
9. Bohm K. H. (1971) *Zbl. Bakt. I. Orig*. 218. 330-334.