70132 Azide Blood Agar, Base

A selective medium for the detection and isolation of streptococci and staphylococci from stool, sewage, food and other specimens.

Composition:

Ingredients	Grams/Litre
Tryptose	10.0
Meat extract	3.0
Sodium chloride	5.0
Sodium azide	0.2
Agar	15.0

Final pH 7.2 +/- 0.2 at 25°C

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: Faintly yellow to brown colored, homogeneous, free flowing powder.
Gelling: Firm
Color and Clarity: Slightly yellow to brown colored (without blood), clear to slightly turbid gel forms in petri plates.

Directions:
Suspend 33 g in 1 litre of distilled water and bring to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. For the production of typical hemolytic reactions, cool to 45-50°C and add sterile defibrinated blood.

Principle and Interpretation:
Azide Blood Agar is recommended for the isolation and cultivation of streptococci and staphylococci from clinical and nonclinical samples. It is a modification of the broth medium originally formulated by Edwards for the detection of Streptococci from bovine mastitis cases (1). Packer modified the medium to a blood agar containing sodium azide and crystal violet (2).
Tryptose and meat extract are the sources of nitrogen and essential growth factors. Sodium azide acts largely inhibits the growth of gram-negative bacteria while sparing enterococci, staphylococci and streptococci. It also prevents the swarming of Proteus (3, 4). Sodium chloride maintains the osmotic balance of the medium and Agar is the solidifying agent. The addition of blood serves as an additional source of growth factors and enables to differentiate based on the haemolytic reactions (5). The pH of the medium influences the inhibitory action of sodium azide (2). At pH 7.2, sodium azide does not interfere with the haemolytic reactions. The haemolytic pattern on Azide Blood Agar of streptococci and staphylococci is different compared to the reaction on non-selective blood agar. The degree of haemolysis or the haemolytic pattern depends on the type of blood used and also the composition of blood agar used (6). It is recommended to use light inoculum and incubate anaerobically for enhancement for the haemolytic reaction.

Cultural characteristics after 24-72 hours at 35±2°C.

Organisms (ATCC)	Growth	hemolysis
Escherichia coli (25922)	-	-
Enterococcus faecalis (19433)	+++	Gamma
Staphylococcus aureus (25923)	+++	Beta
Staphylococcus aureus (6538)	+++	Beta
Streptococcus pyrogenes (19615)	+++	beta

References:
1. Edwards, J. Comp. Pathol. Therap., 46:211 (1933)
2. Packer, J. Bacteriol., 1943, 46:343 (1943)
3. Snyder and Lichstein, J. Infect. Dis., 67:113 (1940)
4. Lichstein and Snyder, J. Bacteriol., 42:653 (1941)
5. Isenberg, (Ed.), Clinical Microbiology Procedures Handbook, Vol. I., American Society for Microbiology, Washington, D.C. (1992)
6. P.R. Murray, E.J. Baron, J.H. Jorgensen, M.A. Pfaller, R.H. Yolken, (Eds.),8th Ed., Manual of Clinical Microbiology, ASM, Washington, D.C. (2003)

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.