

Staph/Strep Selective Supplement

PRODUCT INFORMATION

N001-5g - Nalidixic Acid, Powder, 5g

N001-25g - Nalidixic Acid, Powder, 25g

N001-100g - Nalidixic Acid, Powder, 100g

C039-100mg - Colistin Sulfate, Powder, 100mg

C039-1g - Colistin Sulfate, Powder, 1g

DESCRIPTION

Columbia Blood Agar Base with Staph/Strep Selective Supplement is a selective medium for *staphylococci* and *streptococci*.

BACKGROUND

Nalidixic acid is the first of the synthetic quinolone antibiotics. Nalidixic acid is effective against both gram-positive and gram-negative bacteria. In lower concentrations, it acts in a bacteriostatic manner; that is, it inhibits growth and reproduction. In higher concentrations, it is bactericidal, meaning that it kills bacteria instead of merely inhibiting their growth.

Colistin is a polymyxin antibiotic produced by certain strains of *Bacillus polymyxa* var. *colistinus*. Colistin is a mixture of cyclic polypeptides colistin A and B. Colistin is effective against most Gram-negative bacilli and is used as a polypeptide antibiotic.

Mechanism of action

APPLICATION IN COLUMBIA BLOOD AGAR BASE

A selective medium for *Staphylococci* and *Streptococci* of the type described by Ellner and subsequently named Columbia CNA Agar can be made by adding Staph/Strep supplement to Columbia Agar Blood Base. Columbia CNA Agar can thus be prepared quickly and conveniently as and when required. Because the antibiotics contained in the supplement are freeze-dried they always show optimal activity at the time of use.

The supplemented Columbia Agar is inhibitory to *S. albus* and *Micrococcus* species as well as Gram-positive

and Gram-negative rods. It suppresses growth of *Proteus*, *Klebsiella* and *Pseudomonas* species while permitting unrestricted growth of *S. aureus*, haemolytic *streptococci* and *enterococci*.

Phenylethyl alcohol medium by comparison frequently permits growth of *Proteus* and *Klebsiella* species as well as showing a marked attenuation of the growth of Gram-positive cocci.

Staph/Strep Supplement enables important Gram-positive cocci to be recognised more readily and isolated easily from the mixed bacterial populations contained in many clinical specimens and foods.

Content concentrations

Typical Formula*	mg/litre
Columbia Blood Agar Base	
Special peptone	23
Starch	1
Sodium chloride	5
Agar	10
Final pH 7.3 ± 0.2 @ 25°C	
Staph/Strep Selective Supplement	
Nalidixic acid	15.0
Colistin sulphate	10.0
* Adjusted as required to meet performance standards	

Table 1 - Typical Formula for Columbia Blood Agar Base and Staph/Strep Selective Supplement

METHOD

Preparation

Add appropriate amount of Columbia Blood Agar Base in distilled water. Boil to dissolve and sterilise by autoclaving at 121°C for 15 minutes. Reconstitute Staph/Strep Selective Supplement as directed aseptically add the contents to Columbia Agar Base containing 5-7% Defibrinated Horse Blood cooled to approximately 50°C. Mix well and pour into sterile Petri dishes.

Protocol

The medium is inoculated in the normal way and incubated aerobically at 35°C for 18 hours.

DO NOT INCUBATE IN CO₂.

Quality control

Positive control:

Staphylococcus aureus ATCC® 25923: Good growth

Streptococcus pyogenes ATCC® 19615: Good growth;
colourless/white colonies, β -haemolysis

Negative control:

Escherichia coli ATCC® 25922: Inhibited

REFERENCES

1. Ellner P. D., Stoessel C. J., Drakeford E. and Vasi F. (1966) Tech. Bul. Reg. Med. Technol. 36. No. 3.
2. Morton C. E. G. and Holt H. A. (1989) Med. Lab. Sci. 46. 72-73.

