

Streptococcus Selection Broth (Pike) — Catalogue No. AS-1450

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Product Information

Product name	Streptococcus Selection Broth (Pike)
Catalogue number	AS-1450
Other names	Streptococcus Selective Broth; Pike Broth; Enterococcus Selective Broth (azide–crystal violet formulation)
Product type	Dehydrated selective enrichment broth
Usage	30.6 g/L
Final pH	7.4 ± 0.2 at 25 °C
Pack size	500 g (yields about 16 L)

Intended Use

Streptococcus Selection Broth is used for the selective enrichment of streptococci and enterococci from samples containing heavy mixed flora. Growth is read as turbidity and confirmed by Gram stain and subculture. For laboratory microbiological testing, quality control and research use only. Not intended for direct use in food, human or veterinary therapeutic applications, diagnosis, or consumption.

Summary and History

Pike (1944) described an enrichment broth containing sodium azide and crystal violet for recovering haemolytic streptococci from throat swabs heavily contaminated with other organisms. The formulation remains in use as a selective enrichment step before isolation on solid media.

Mode of Action

Casein and soy peptones, dextrose and L-cystine support streptococci and enterococci. Sodium azide and sodium sulfite inhibit Gram-negative rods, and crystal violet at 0.0002 g/L suppresses staphylococci and many other Gram-positive bacteria. The medium contains no esculin or bile and has no differential colour reaction.

Typical Formula

Ingredient	g/L	Function
Casein peptone	15.0	Amino acids and nitrogen
Soy peptone	5.0	Peptides, vitamins and carbohydrates
Dextrose	5.0	Energy source
Sodium chloride	4.0	Osmotic balance
Sodium citrate	1.0	Buffering and carbon source
L-Cystine	0.2	Lowers redox potential
Sodium sulfite	0.2	Reducing agent; inhibits Gram-negative rods
Sodium azide	0.2	Selective agent (Gram-negative bacteria)
Crystal violet	0.0002	Selective agent (staphylococci, Gram-positives)
Total	30.6	

Formula may be adjusted to meet performance requirements.

Preparation

- Suspend 30.6 g of powder in 1 L of purified water.
- Heat gently with stirring to dissolve completely.
- Dispense into tubes, for example 10 mL per tube.
- Autoclave at 118 °C for 15 minutes. Avoid overheating, which makes the medium more inhibitory. If used the same day, autoclaving may be omitted.

Procedure and Interpretation

- Inoculate the sample or swab into the broth and incubate aerobically at 35–37 °C for 18–24 hours.
- Positive: turbidity. Gram-stain the broth and subculture onto blood agar or Bile Esculin Agar for identification.
- Negative: no turbidity after 24 hours.

Quality Control

Recommended control strains. Incubate at 35–37 °C for 18–24 h.

Control strain	Inoculum (CFU)	Expected result
<i>Streptococcus pyogenes</i> ATCC 19615	50–100	Good growth (turbidity)
<i>Enterococcus faecalis</i> ATCC 29212 (WDCM 00087)	50–100	Good growth (turbidity)
<i>Escherichia coli</i> ATCC 25922 (WDCM 00013)	$\geq 10^3$	Inhibited
<i>Staphylococcus aureus</i> ATCC 25923 (WDCM 00034)	$\geq 10^3$	Inhibited to partially inhibited

Limitations

- The medium has no differential reaction; all growth must be confirmed by Gram stain and subculture.
- Some Gram-negative bacteria and staphylococci may grow partially in heavily contaminated samples.
- Overheating during preparation increases inhibition and may reduce recovery.

Storage and Shelf Life

Dehydrated medium	Store at 10–30 °C in a dry place, protected from light, with the container tightly closed. Use before the expiry date on the label.
Prepared medium	Store at 2–8 °C, protected from light. Validate the use period in-house.
Signs of deterioration	Caking, discolouration or moisture absorption in the powder.

Safety

Contains sodium azide (0.65% w/w in the powder). Sodium azide can form explosive metal azides in copper or lead plumbing and releases toxic gas with acids. Autoclave used media before disposal and flush drains with plenty of water. Read the Safety Data Sheet before use.

References

- Pike RM. An enrichment broth for isolating hemolytic streptococci from throat swabs. *Proc Soc Exp Biol Med.* 1944;57:186–187.

- HiMedia Laboratories. Technical Data: Streptococcus Selection Broth (M303).
- MacFaddin JF. Media for Isolation–Cultivation–Identification–Maintenance of Medical Bacteria, Vol. 1. Williams & Wilkins; 1985.

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