Yersinia Selective Agar (Schiemann's CIN Agar) (NCM0182)

Intended Use

Yersinia Selective Agar is used with cefsulodin and novobiocin for the isolation of *Yersinia enterocolitica* in a laboratory setting. Yersinia Selective Agar is not intended for use in the diagnosis of disease or other conditions in humans.

Description

This medium is based on the work of Schiemann. It is used for the isolation and enumeration of *Yersinia* spp. from food. The selective components are sodium desoxycholate, crystal violet, cefsulodin, irgasan and novobiocin. Yersiniae ferment mannitol with an intense, localized, acid production in the center of the colony which produces a red 'bull's eye' appearance. The ratio of transparent border to red centre varies with serotype and environmental strains may appear rough with an irregular edge. Most other enteric bacteria, if they grow, produce a larger colony with a diffuse pinkish center and opaque outer zone.

Typical Formulation

Peptone Mix	22.5 g/L
Mannitol	20.0 g/L
Sodium Chloride	1.0 g/L
Magnesium Sulphate	0.01 g/L
Sodium Pyruvate	2.0 g/L
Sodium Deoxycholate	0.5 g/L
Neutral Red	0.03 g/L
Crystal Violet	0.001 g/L
Agar	12.0 g/L

Final pH: 7.4 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Supplement

NCM4034 CIN Yersinia Selective Supplement

Precaution

Refer to SDS

Preparation

1. Suspend 58 grams of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium. DO NOT AUTOCLAVE
3. Cool to 45-50°C and aseptically add 2 vials of NCM4034-0.5* CIN Yersinia Selective Supplement, each reconstituted using 5mL of sterile 30% ethanol.

*Larger vials may be available. Please see appropriate supplement data sheet for availability and preparation instructions.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free-flowing, and beige.

Prepared Appearance: Prepared medium is red, and clear.

Expected Cultural Response: Cultural response on Yersinia Selective Agar incubated at 30 ± 1°C and examined for growth after 18-24 hours.

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Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Recovery	Reaction
Enterococcus faecalis ATCC® 29212	$>10^5$	Complete Inhibition	N/A
Escherichia coli ATCC® 25922	$>10^5$	Partial to complete inhibition	N/A
Escherichia coli ATCC® 8739	$>10^5$	Partial to complete inhibition	N/A
Proteus mirabilis ATCC® 29906	$>10^5$	Partial to complete inhibition	N/A
Salmonella typhimurium ATCC® 14028	$>10^5$	Partial to complete inhibition	N/A
Staphylococcus aureus ATCC® 25923	$>10^5$	Complete Inhibition	N/A
Yersinia enterocolitica ATCC® 9610	50-200	>50%	Red, bull's-eye colonies
Yersinia enterocolitica ATCC® 23715	50-200	>50%	Red, bull's-eye colonies
Yersinia enterocolitica ATCC® 27729	50-200	>50%	Red, bull's-eye colonies

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

For a complete discussion on the isolation and identification of *Yersinia*, refer to specific procedures.

Results

Yersinia enterocolitica colonies appear translucent or translucent with dark pink centers. Colony edges are entire or irregular. After 48 hour incubation, colonies appear dark pink with a translucent border and may be surrounded by a zone of precipitated bile. Growth of non-*Yersinia* organisms is markedly to completely inhibited.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing or appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium. Further tests are necessary for confirmation of *Yersinia* spp.
2. Some strains of normal enteric organisms may be encountered that are not inhibited or only partially inhibited on complete medium, such as *Citrobacter freundii, Serratia liquefaciens,* and *Enterobacter agglomerans*.
3. Growth of *Yersinia frederiksenii, Y. kristensenii, Y. pseudotuberculosis* and *Y. intermedia* is not inhibited on complete medium. Colonies of these organisms must be differentiated from *Y. enterocolitica* on the basis of additional characteristics.

Storage

Store dehydrated culture media at 2-30°C away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

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References

1. Schiemann, D.A. (1979). Synthesis of a selective agar medium for *Yersinia enterocolitica.* Can. J. Microbiol. 25: 1298-1304.
2. Schiemann, D.A. (1982). Development of a twostep enrichment procedure for recovery of *Yersinia enterocolitica* from food. Appl. Eniviron. Microbiol. 43: 14-27.
3. Mossel, D.A.A. (1987). Cefsulodin Irgasan Novobiocin (C.I.N.) agar. Int. J. Food. Microbiol. 5: 208, 209.