Cetrimide Agar (NCM0109)

Intended Use
Cetrimide Agar is used in the isolation and identification of *Pseudomonas aeruginosa* and is not intended for use in the diagnosis of disease or other conditions in humans. Conforms to Harmonized USP/EP/JP Requirements.

Description
A medium recommended by the Harmonized USP/EP/JP for the isolation and identification of *Pseudomonas aeruginosa*, in non- sterile pharmaceutical samples. Conforms to USP/EP/JP performance specification. Gelatin is a source of nitrogen while glycerol acts as a carbon source. Cetrimide is a quaternary ammonium compound that inhibits the growth of a wide range of Gram-positive and some Gram-negative micro-organisms. Magnesium chloride and Dipotassium sulphate improve the production of pyoverdin and pyocyanin pigments that combine to give *Pseudomonas aeruginosa* characteristic green colonies. According to the Harmonized USP/EP/JP, subculture is carried out onto the medium after enrichment in Casein Soya Bean Digest Broth.

Typical Formulation

Pancreatic Digest of Gelatin	20.0 g/L
Magnesium Chloride	1.4 g/L
Dipotassium Sulfate	10.0 g/L
Cetrimide	0.3 g/L
Agar	13.6 g/L

pH: 7.2 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution
Refer to SDS

Preparation
1. Suspend 45.3 grams of the medium in 1 liter of purified water.
2. Add 10mL of Glycerol.
3. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
4. Autoclave at 121°C for 15 minutes.
5. Cool to 45-50°C.

Test Procedure
Inoculate *Pseudomonas aeruginosa* colonies directly on Cetrimide Agar by the streak method from nonselective medium or the sample.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is translucent and pale yellow.

Expected Cultural Response and Harmonized USP/EP/JP Growth Promotion Testing: Cultural response on Cetrimide Agar were tested at Harmonized USP/EP/JP specified temperatures and incubation times.

Effective Date: 2/13/2020
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MICROORGANISM	ATCC	APPROX. INOCULUM (CFU)	EXPECTED RESULTS	
			Growth	Reaction
Escherichia coli	8739	$>10^3$	Inhibited	---
Escherichia coli	25922	$>10^3$	Inhibited	---
Pseudomonas aeruginosa	9027	10-100	10-100	Yellow-green
Pseudomonas aeruginosa	10145	10-100	10-100	Yellow-green
Pseudomonas aeruginosa	27853	10-100	10-100	Yellow-green
Staphylococcus aureus	25923	$>10^3$	Inhibited	---

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

Results

Examine plates or tubes for the presence of characteristic blue, blue-green, or yellow-green pigment. *Pseudomonas aeruginosa* typically produces both pyocyanin and fluorescein.

Expiration

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

Limitations of the Procedures

1. Due to nutritional variation, some strains may grow poorly or fail to grow on this medium.
2. Occasionally some enterics will exhibit a slight yellowing of the medium; however, this coloration is easily distinguished from fluorescein production because this yellowing does not fluoresce.
3. Some non-fermenters and some aerobic spores formers may exhibit a water-soluble tan to brown pigmentation on this medium. *Serratia* strains may exhibit a pink pigmentation.
4. Studies of Lowbury and Collins showed *Ps. aeruginosa* can lose its fluorescence under UV if the cultures are left at room temperature for a short time. Fluorescence reappears when plates are re-incubated.
5. Further tests are necessary for confirmation of *Ps. aeruginosa*.

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.

References

1. European Pharmacopoeia 10th Edition (2020)
2. United States Pharmacopeia National Formulary 2018: USP 41 NF 36
3. Japanese Pharmacopeia 17th Edition (2017)

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