## NYC Agar Base (DM729)

**Intended Use**
NYC Agar Base (DM729) is recommended for selective isolation of *Gonococci*.

**Product Summary and Explanation**
NYC Agar Base was originally developed by Fauer, Weisburd and Wilson[1-3] at the New York City Department of Health for selective isolation of pathogenic *Neisseria* species from clinical specimens. This medium is primarily a peptone-corn starch agar-base buffered with phosphates and supplemented with horse plasma, horse haemoglobin, dextrose, yeast autolysate and antibiotics.[1,2] This medium is superior to other media generally employed for the isolation of *Neisseria* species.[1,4,5] The transparent nature of the medium helps in studying the colonial types.[6]
The antimicrobial mixture in NYC Medium is similar to that of Martin-Lewis Agar, except that the vancomycin concentration is reduced from 4 to 2µg/mL and trimethoprim is reduced from 5.0 to 3.0µg/mL. Both formulations contain anisomycin at 20 mg/L. Clinical field trials with NYC Medium indicate that the medium is superior to both Thayer-Martin[1] and Martin-Lewis[7,8] agars in recovery of *N. gonorrhoeae*.

**Principles of the Procedure**
NYC Agar Base contains proteose peptone, horse plasma, haemoglobin provide nutrients for the growth of *N. gonorrhoeae* and *N. meningitidis*. The phosphate salts buffers the medium at a neutral pH. The selective supplement added contains the antibiotics vancomycin, colistin, nystatin and trimethoprim, to suppress the accompanying flora. Vancomycin is active primarily against gram-positive bacteria. Colistin inhibits gram-negative bacteria, including *Pseudomonas* species, while *Proteus* is inhibited by trimethoprim.[9] The combination of trimethoprim and colistin acts synergistically against gram-negative bacilli.[10] Corn starch helps to neutralize the toxic metabolites produced by *Neisseria*. The yeast autolysate supplement fulfils the $CO_2$ requirements needed to enhance *Neisseria* growth. Oxaloacetic acid present in yeast is metabolized by gonococci to produce sufficient $CO_2$ for growth of capnophilic gonococci.[11] Also, the presence of yeast autolysate reduces the lag phase of growth of *Neisseria*, thus enhancing both size and number of colonies. The specimen can be directly streaked on the medium to obtain maximum isolation.

**Formula / Liter**

| Ingredients | Gms / Liter |
|---|---|
| Proteose peptone | 15.00 |
| Corn starch | 1.00 |
| Glucose | 5.00 |
| Sodium chloride | 5.00 |
| Dipotassium hydrogen phosphate | 4.00 |
| Potassium dihydrogen phosphate | 1.00 |
| Agar | 20.00 |
| Final pH: 7.4 ± 0.2 at 25°C | |
| Formula may be adjusted and/or supplemented as required to meet performance specifications | |

**Precautions**
1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

**Directions**
1. Suspend 25.5 grams of the medium in 320 ml of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Avoid overheating.
5. Cool to 45-50°C and add aseptically 100 ml of sedimented horse blood cells and 60 ml of citrated horse plasma along with rehydrated contents of 1 vial of NYC Supplement (MS064) and 1 vial of Yeast Autolysate Supplement (MS037).
6. Mix well and pour into sterile petri plates.

**Quality Control Specifications**

| | |
|---|---|
| **Dehydrated Appearance** | Cream to yellow homogeneous free flowing powder |
| **Prepared Medium** | Yellow coloured clear to slightly opalescent gel forms in Petri plates |
| **Reaction of 5.1% solution** | pH 7.4 ± 0.2 at 25°C |
| **Gel Strength** | Firm, comparable with 2.0% agar gel. |

**Expected Cultural Response:** Cultural characteristics observed after in presence of 5-10% CO2 and 70% humidity with added sedimented horse blood cells and citrated horse plasma along with rehydrated contents of 1 vial of NYC Supplement (MS064) and 1 vial of Yeast Autolysate Supplement (MS037), after an incubation at 35-37°C for 40-48 hours.

| Sr. No. | Organisms | Results to be achieved | | |
|---|---|---|---|---|
| | | Inoculum (CFU) | Growth | Recovery |
| 1. | *Haemophilus influenza ATCC 19418* | 50-100 | good-luxuriant | >=50% |
| 2. | *Neisseria gonorrhoea ATCC 19424* | 50-100 | good-luxuriant | >=50% |
| 3. | *Neisseria meningitidis ATCC 13090* | 50-100 | good-luxuriant | >=50% |
| 4. | *Streptococcus pneumoniae ATCC 6303* | 50-100 | good-luxuriant | >=50% |
| 5. | *Streptococcus pyogenes ATCC 19615* | 50-100 | good-luxuriant | >=50% |
| 6. | *Pseudomonas aeruginosa ATCC 27853* | 50-100 | none-poor | <=10% |
| 7. | *Proteus mirabilis ATCC 13883* | 50-100 | none-poor | <=10% |

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

**Test Procedure**

Streak the specimen as soon as possible after it is received in the laboratory. If material is being cultured directly from a swab, proceed as follows:

1. Roll swab directly on the medium in a large "Z" to provide adequate exposure of swab to the medium for transfer of organisms.
2. Cross-streak the "Z" pattern with a sterile wire loop, preferably in the clinic. If not done previously, cross-streaking should be done in the laboratory.
3. Place the culture as soon as possible in an aerobic environment enriched with carbon dioxide.
4. Incubate at 35 ± 2°C and examine after overnight incubation and again after approximately 48 hours.
5. Subculture for identification of *N. gonorrhoeae* should be made within 18-24 hours. If shipped after incubation, colonies should be subcultured before performing biochemical identification tests in order to ensure that adequate viability is achieved.
6. Refer to appropriate references for standard test procedures.

**Results**

1. Typical colonial morphology is as follows:
   *N. gonorrhoeae* may appear as small (0.5-1.0 mm) grayish white to colorless mucoid colonies.
   *N. meningitidis* appears as large colorless to bluish-gray mucoid colonies.
2. Colonies may be selected for Gram-staining, subculturing or other diagnostic procedures.
3. Refer to appropriate references and standard test procedures for interpretation of results.

**Storage**

Store the sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

**Expiration**

Refer to the 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 Procedure**

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

**Packaging**

**Product Name : NYC Agar Base**
**Product Code : DM729**
**Available Pack sizes : 500gm**

**References**


1. Fauer, Weisburd, Wilson and May. 1973. Health Lab. Sci. *10*:44.
2. Fauer, Weisburd and Wilson. 1973. Health Lab. Sci. *10*:55.
3. Martin, Billings Hackney and Thayer. 1967. Public Health Rep. *82*:361.
4. Anstey, Gun-Munro, Rennie, Thornley, Schaus, Flannigan, Hussain and Maharajah. 1984. J. Clin. Microbiol. *16*:754.
5. Center for Disease Control. 1975. Criteria and techniques for the diagnosis of gonorrhea, USPHS, Atlanta, Ga.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore
7. Lawton and Koch, 1982, J. Clin. Microbiol., 20: 905.
8. Simmons N. A., 1970, J. Clin. Pathol., 23, 757.
9. Knapp and Koumans. 1999. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
10. Granato, Schneible-Smith and Weiner, 1981. J. Clin. Microbiol. *13*:963.
11. Lawton and Koch. 1982. J. Clin. Microbiol. *20*:905.


**Further Information**

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