UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ

FACULTAD DE CIENCIAS QUÍMICAS

Laboratorio de Microbiología

# *Klebsiella pneumoniae*

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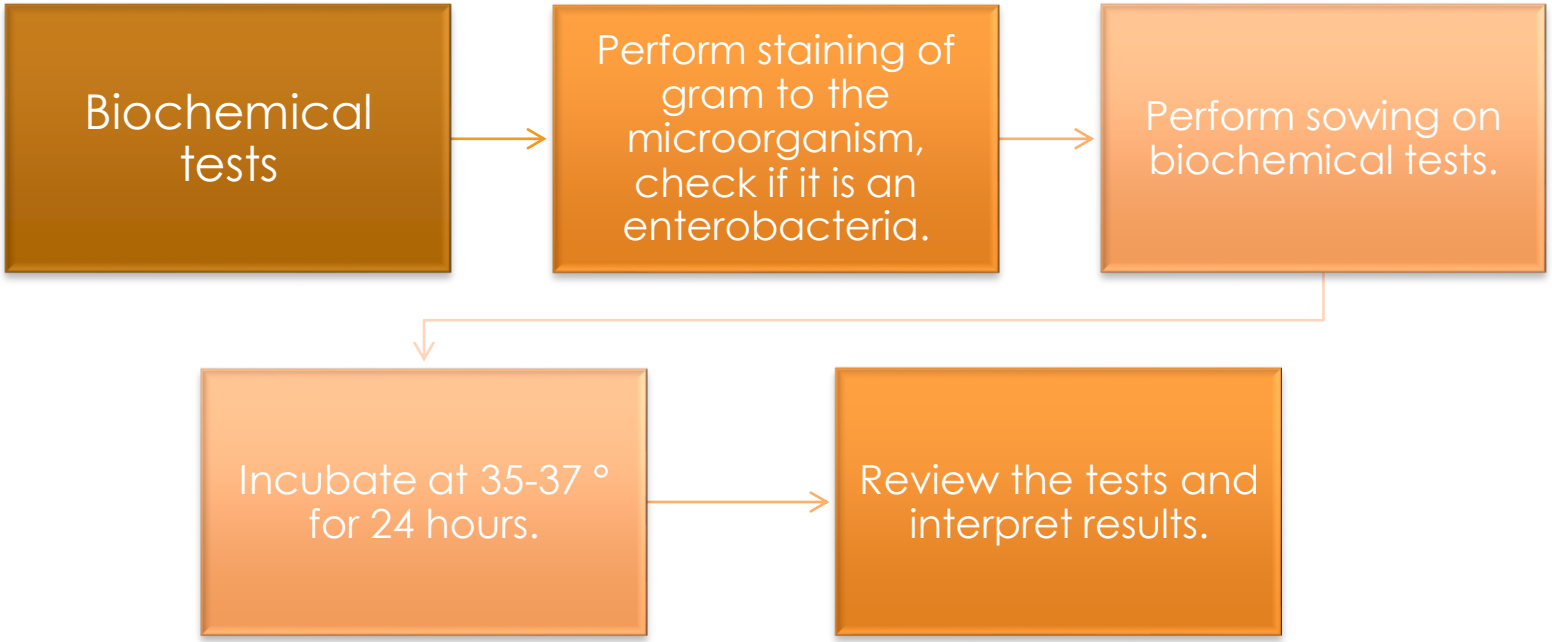
Group: 8:00 – 9:00

# OBJECTIVE.

- To be able to identify the results in the different biochemical tests of the microorganism.
- To learn to perform the susceptibility tests by the methods: CMI, CMB and Kirby - Bauer.

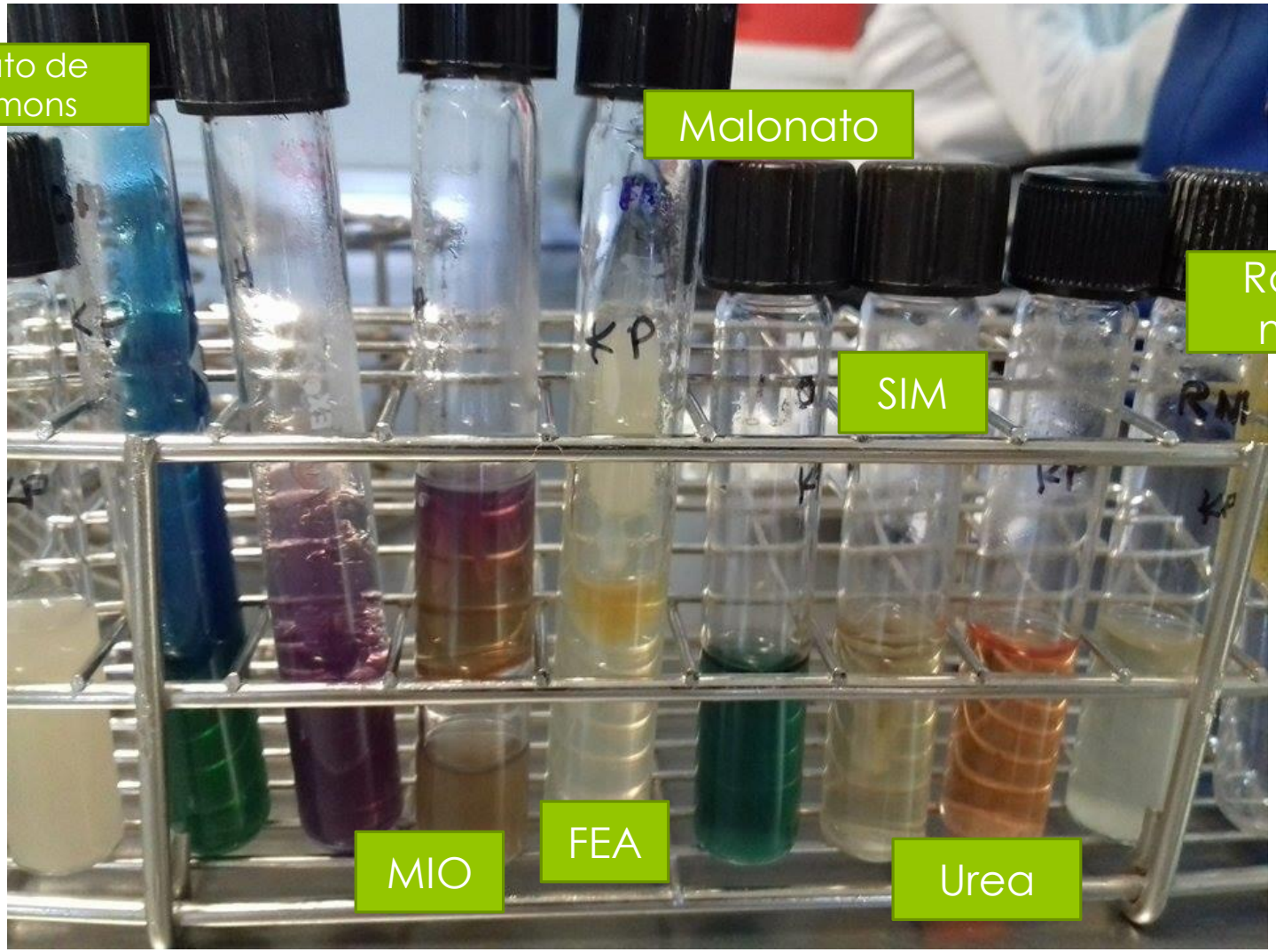
# Klebsiella pneumoniae

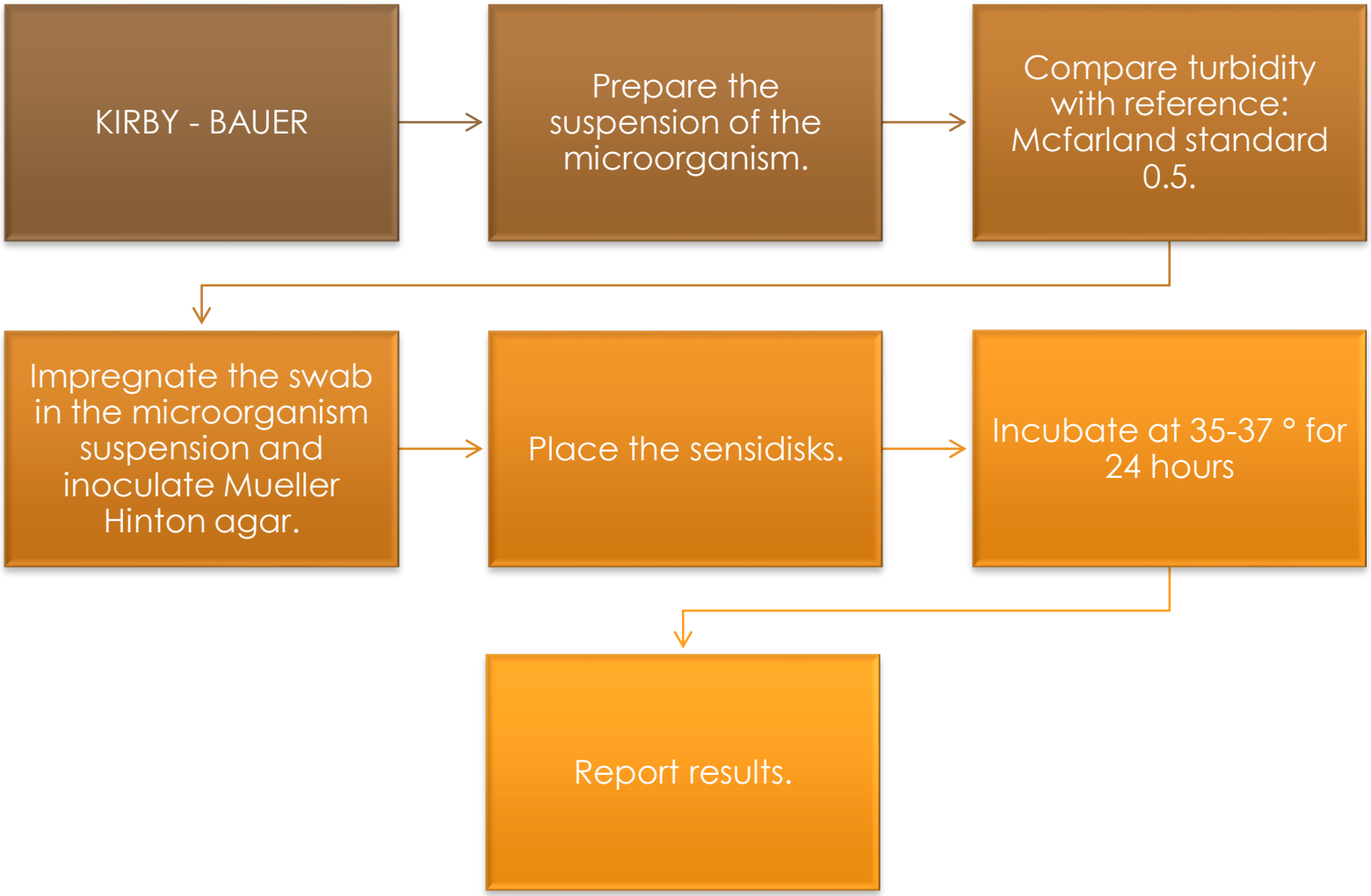
- Gram negative bacteria.
- The term 'Klebsiella' was coined in honor of the German pathology, Edwin Klebs.
- It belongs to the family of Enterobacteriaceae, organisms resistant to most antibiotics.
- Produces: pneumonia, urinary tract infections, septicemia.
- Anaerobic facultative.
- Presents capsule.


Biochemical tests
Perform staining of gram to the microorganism, check if it is an enterobacteria.
Perform sowing on biochemical tests.
Incubate at 35-37 ° for 24 hours.
Review the tests and interpret results.

# BIOCHEMICAL TESTS

| Test | Result |
|---|---|
| CITRATO DE SIMMONS | POSITIVE |
| A. FEA | NEGATIVE |
| LIA | POSITIVE |
| KLIGLER | POSITIVE |
| SIM | NEGATIVE |
| MIO | NEGATIVE |
| MALONATO | POSITIVE |
| CALDO UREA | POSITIVE |
| ROJO METILO | NEGATIVE |
| VOGES PROSKAEUR | POSITIVE |

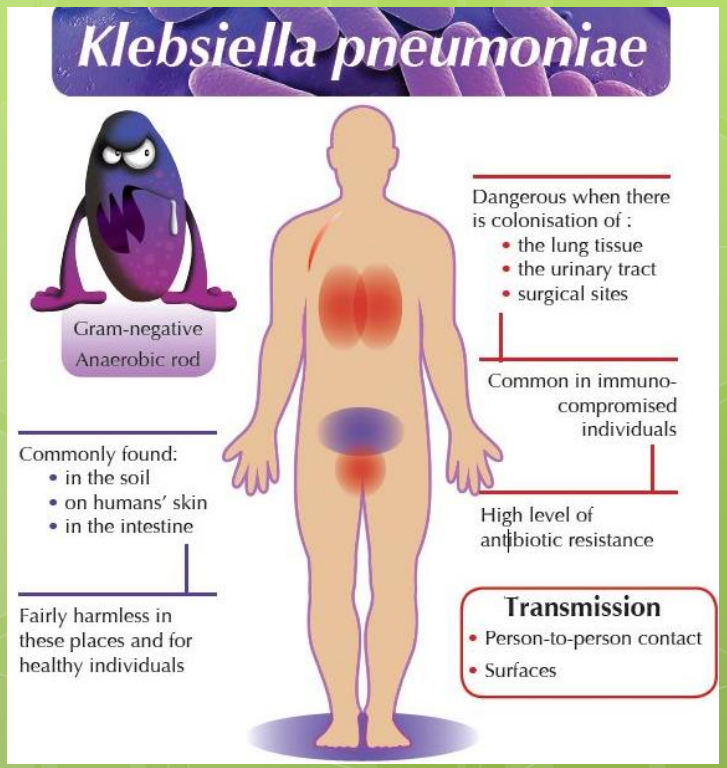

Citrato de Simmons
Malonato
Rojo de metilo
SIM
MIO
FEA
Urea


KIRBY - BAUER
Prepare the suspension of the microorganism.
Compare turbidity with reference: Mcfarland standard 0.5.
Impregnate the swab in the microorganism suspension and inoculate Mueller Hinton agar.
Place the sensidisks.
Incubate at 35-37 ° for 24 hours
Report results.

# ANTIMICROBIAL SUSCEPTIBILITY: KIRBY - BAUER DISSEMINATION METHOD.

| | RESISTENTE (mm) | INTERMEDIATE (mm) | SUSCEPTIBLE (mm) | RESULT (mm) |
|---|---|---|---|---|
| CIP – 5 | < 15 | 16 – 20 | > 21 | 22 |
| NA – 30 | < 13 | 14 – 18 | > 19 | 21 |
| CRO - 30 | < 13 | 14 - 20 | > 21 | 33 |

Ciprofloxacin
Nalidixic acid
Ceftriaxone




# CLINICAL CASE.

# Characteristics of the patient

- A 16-year-old male patient with no history of alcoholism or smoking. No allergy to medications. Evolution of general malaise, fever, hyporexia and abdominal pain.

MEDICAL RESULTS:

- Abdominal ultrasound: documented single liver abscess in the liver. Associating hypotension and anuria. Requires renal replacement therapy, mechanical assisted ventilation, and even percutaneous dilatation tracheostomy.
- Chest x-ray: shows diffuse infiltrates and there is evidence of consumption coagulopathy.
- Percutaneous drainage of the abscess was performed and Gram positive bacillus positive culture, identified as Klebsiella pneumoniae

# TREATMENT:

- Surgical intervention for drainage of the abscess. The cavity closure is achieved. However, the persistence of the abscess is demonstrated by tomography and is now associated with tomography, with right basal pneumonia. It is restarted and drainage and placement of probes is performed. The new tomographic control shows that hepatic abscess persists. Change of hospital.

## ANTIBIOTIC TREATMENT

- Meropenem, tigecycline, piperacillin-tazobactam, vancomycin and amphotericin. It is reintervented by hypovolemic shock secondary to hemoperitoneum.
- The cavity is washed and packaged, and in a subsequent intervention abdominal cavity closure is achieved. Non-surgical management of the pulmonary abscess is decided.
- The patient had a good clinical course.
- He does not have vision in his right eye. Normal brain scan is indicated. Ocular ultrasound indicates findings compatible with endogenous endophthalmitis. It improves its general state, is definitive the loss of the vision of right eye. Continued antibiotic treatment, days after he is a graduate of the Hospital.

# BIBLIOGRAPHY


- Caso clinico. Absceso hepático asociado a absceso pulmonar y endoftalmitis. Jairo Cordero-Chen, Eduardo Catalán-Sánchez, Juan Ignacio Padilla-Cuadra, Jorge Ramírez-Arce. Agosto 2012 http://www.scielo.sa.cr/pdf/amc/v55n1/art11v55n1.pdf
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