



QUÍMICO  
FARMACO  
BIÓLOGO

UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ  
FACULTAD DE CIENCIAS QUÍMICAS  
LABORATORIO DE MICROBIOLOGÍA GENERAL



## **INFECTION BY *Serratia marcescens*: CLINICAL CASE**

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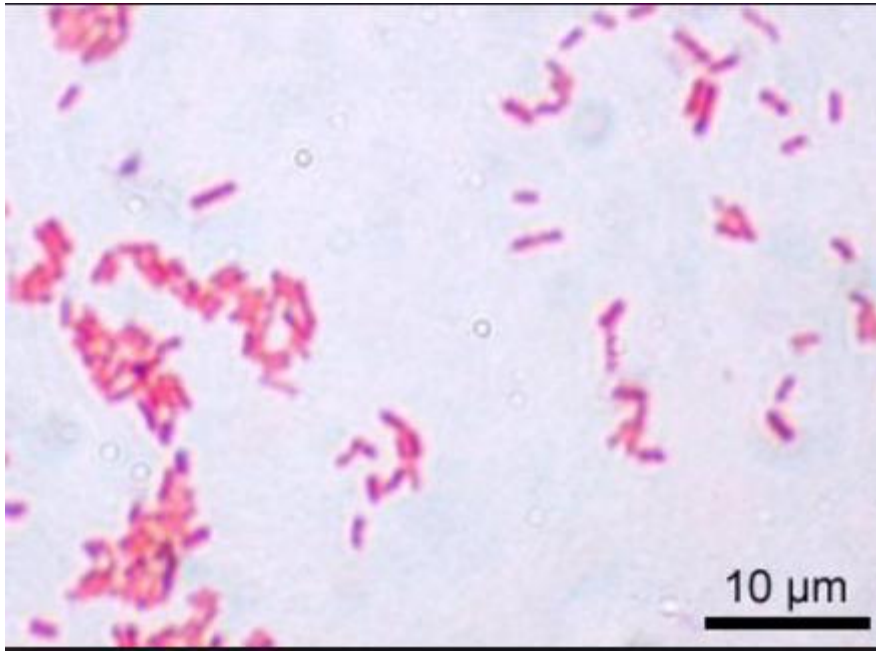
**Schedule:**

9:00- 10:00

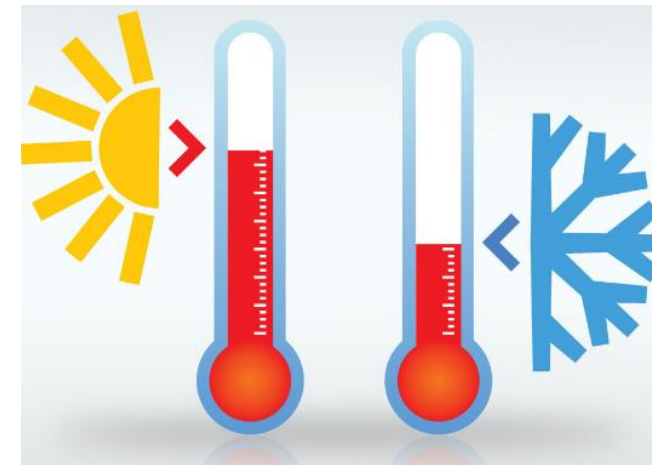
Date: Marzo Del 2017

## **SUMMARY**

Considering that *Serratia marcescens* is an opportunistic bacillus with an atypical presentation, it should be kept in mind as a possible etiological agent in the over-infection of chronic diseases such as tuberculosis, where poor general condition and weakening of the immune system would facilitate its presence.

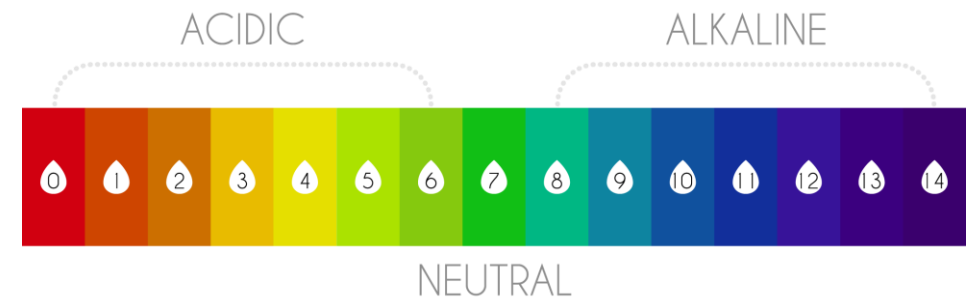


It can grow at a temperature ranging from 3.5-40 ° C, at pH levels ranging from 5 to 9. The environment in which it predominates is in humid conditions, for that reason it is possible to find it growing in the baths and sewers



## INTRODUCTION

The *Serratia marcescens*. It is a gram negative bacillus, facultative anaerobic, negative oxidase; Belonging to the family Enterobacteriaceae, which grows abundantly in chocolate agar, blood agar, McConkey agar, produces colonies that can be pigmented, as it generates a red pigment called Prodigiosine.





Its acquisition is mainly hospital-acquired, especially in intensive care unit; Being the respiratory secretions, wounds and urine the most frequent colonization sites. Clinically, bacteremia by *Serratia marcescens* occurs more frequently in patients with underlying disease such as diabetes, neoplasms, chronic renal failure

### **Presentation of the clinical case:**

Patient that a year ago was diagnosed of tuberculosis that was treated for 9 months in a discontinuous way. After 30 days without treatment, it begins with intermittent febrile episodes, during a month of evolution.

He currently consults for hemoptotic cough and expectoration.

Patient lucida, with fever intermittent to evening predominance, tachycardic, hypotensive, dysneic, decomposed fascia and hypotrophy of the different muscular masses.

At the inspection of the respiratory tract are observed slightly winged scapula with hypotrophy of the different muscular masses, thoracic expansion is diminished in vertices and bases, auscultated fine rales, auscultation of the voice: pectoriloquia, in addition cardiovascular compromise with jugular engorgement, with R1R2 Hypophontics.

The radiograph evidences: multiple cavitations, some calcified, intense infiltrate nodulillar reticulum in both lung fields, compatible with: bilateral pulmonary tuberculosis and interstitial fibrosis



**Studies:**

Sputum smear: negative

Uroculture: negative.

Culture for bacillus acid resistant alcohol: negative.

Culture of sputum: *Serratia marcescens* as sole flora.

Antibiograma: resistant to

Cephalosporin of 1st generation.

Fosfomicin

Sensitive to

Ofloxacin.

Nalidixic acid.

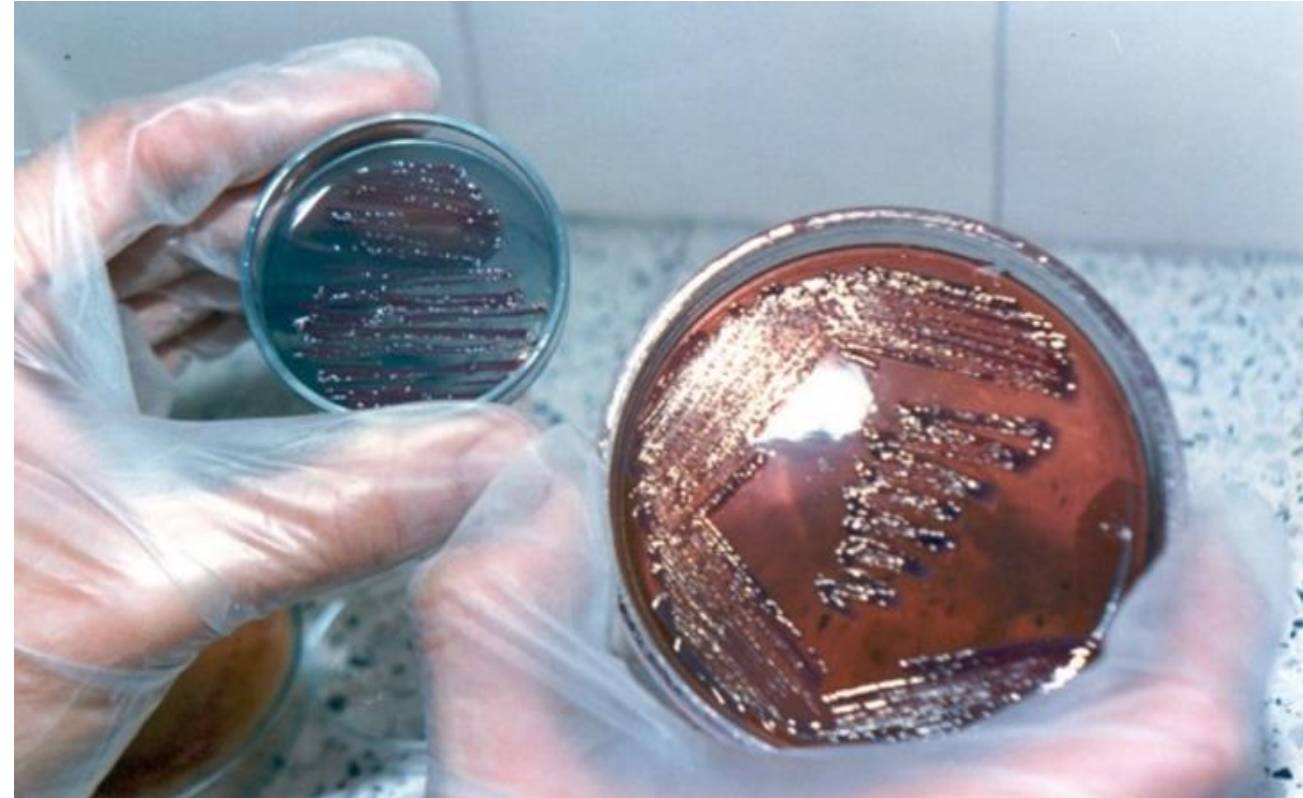
Cefixime.

Cefuroxime.

Ciprofloxacin

Cotrimoxazole.

Aztreonam.



Fotografía N° 1 se aprecia el crecimiento como única flora en agar chocolate de *Serratia marcescens* identificada bioquímicamente, por la morfología de las colonias y su pigmentación.

Nalidixic acid.  
Susceptible.

Nitrofurantoin  
No susceptible

Amikacin  
Susceptible.

Ampicillin  
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## DISCUSSION

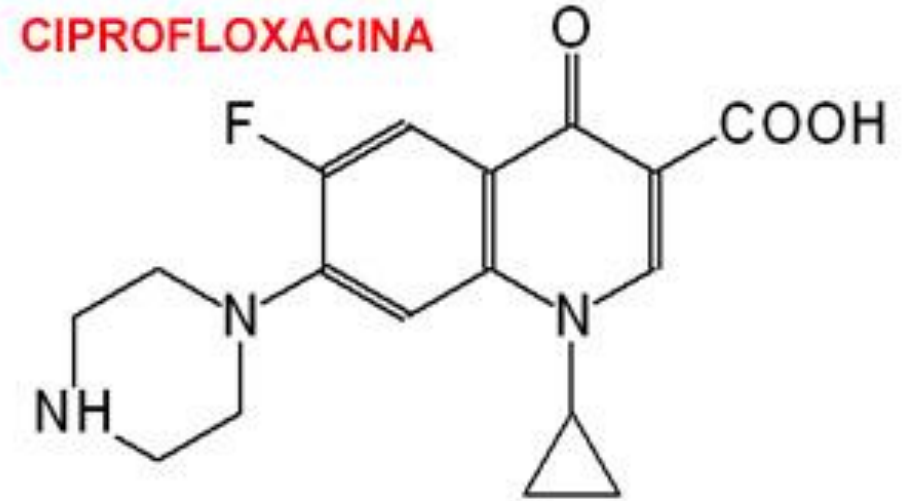
The case presented here is a patient with chronic signs and symptoms characteristic of tuberculosis.

Currently consulted for intermittent fever to evening predominance and cough with hemoptotic expectoration.

We interpret the current fever as being due to *Serratia marcescens* infection with an episode of bacteremia and hemoptotic expectoration of the presence of this bacterium in the mucus purulent expectorated material called prodigiosin.

The case was not presented as an intrahospital infection, nor causing epidemic outbreaks, as the bibliographies denote, since it is an isolated case, and a casual finding; But if present in an immunocompromised patient.

The treatment based on culture and antibiogram was with ciprofloxacin 1,500 mg / day. This therapeutic plan coincides with the treatment suggested by the bibliography consulted. After the treatment the patient progressed favorably.





### Literature says:

Bacteria of the *Serratia* genus are often resistant to antibiotics by chromosomal or plasmid genes encoding resistance enzymes. Therefore, this bacterium presents a primary resistance to penicillins and cephalosporins of third generation

Treatment may be performed with fluoroquinolones (ciprofloxacin, levofloxacin), carbapenems (ertapenem, imipenem, meropenem), or more often third- and fourth-generation cephalosporins (cefotaxime, cefepime), usually associated with an aminoglycoside.



### CONCLUSION

Considering that *serratia marcescens* is an opportunistic bacillus with an atypical present, it should be kept in mind as a possible etiological agent in the over-infection of chronic diseases such as tuberculosis, where poor general condition and weakening of the immune system would facilitate its presence. The chemotherapeutic treatment used was ciprofloxacin 1500 mg / day after the same evolution favorably according to clinical and laboratory parameters.

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