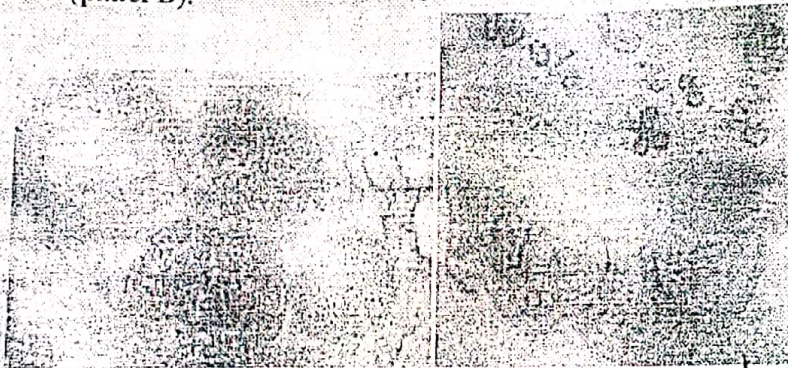


# SGD Microbiology

## Chlamydia trachomatis Pg# 203

A 17-year-old woman is seen by a physician at an STD clinic due to a vaginal discharge, dysuria and pelvic pain. The patient admits to unprotected sex with a new partner within the last month. The vaginal discharge and a urine specimen were subjected to molecular testing, the results of which were positive. Direct staining of a vaginal epithelial cell smear showed cytoplasmic inclusions similar to those shown (panel B).



1. What is the most likely etiology and infection? *Non-monooccal: urethritis, cervicitis*  
*Chlamydia Trachomatis*
2. Name the two biovars of this bacterium. *oculogenital biovar - Trachoma, conjunctivitis, salpingitis*  
*LGV biovar - lymphogranuloma biovar*
3. Two morphological forms are characteristic of the bacterium shown (panel A). One form is infectious, the other replicative. What are these forms called?  
*Elementary* *Reticulate*
4. What are these bacteria called as and where do they live in humans?  
*obligate intracellular parasite* *cytoplasmic granules*
5. Can they be stained by Gram staining? *No*
6. Name the other species of this bacterium and the diseases caused by them.
7. What characteristic virulence trait allows the organism to produce inclusion bodies in the infected cell's cytoplasm? *Inhibition of  $\beta$  Phagocytic-lysosomal fusion*
8. Name some other sexually transmitted diseases. *Chonorrhoea, Vaginitis, Syphilis*
9. What is the name of the genital tract infection caused by this bacterium? *lymphogranuloma*
10. What is the most important tool used for the diagnosis? *Iodine stain Inclusion Venereum*
11. What are the major target cells of this organism?

*Chlamydia pneumoniae Pneumonia*

*Chlamydia Psittaci Pneumonia*



KEY:

1. The patient most likely has non-onococcal urethritis and cervicitis caused by *Chlamydia trachomatis*.
2. Oculogenital biovar: causes trachoma, inclusion conjunctivitis, oculo-genital infections & reactive arthritis.  
LGV biovar: causes lymphogranuloma venereum, a more invasive genital tract infection associated with lymphoid pathology.
3. The infectious form (smaller form) is called the **elementary body**. The replicative form (larger, less dense form) is called the **reticulate body**.
4. Obligate intracellular bacteria & grow within characteristic cytoplasmic vacuoles.
5. No.
6. *Chlamydia trachomatis*: Cause STD  
*Chlamydia pneumoniae*: Cause pneumonia  
*Chlamydia psittica*: Cause pneumonia
7. Inhibition of phago-lysosomal fusion allows the bacterium to create an inclusion body in which the reticulate body successfully replicates.
8. Herpes, Gonorrhoea, Syphilis.
9. Genital tract infection with *C. trachomatis* serovars L1-L3 may present as **lymphogranuloma venereum**.
10. Growth of the organism in cell cultures with iodine stained inclusions seen in the infected cells.
- 11.

Target cells are non ciliated columnar epithelial cells found on the mucous membranes of the conjunctiva, urethra, cervix, endometrium, fallopian tubes, rectum, and respiratory tract.

