MYCOPLASMA

The **Aerobic Tiniest** free living organism , even smaller than some viruses .

They are unique because they **don't have a peptidoglycan cell wall** , they have a **bilayer lipid membrane** (cell membrane) but packed with sterol → to help the bacteria to sheild its components from the surrounding .

As a result they :

1- **Don't have a distinct shape** (don't have a rigid cell wall theirshape vary from round to oval (oblong : cylindrical)
2- **Not susceptible to beta lactams** (anti ribosomal drugs are effective in killing this bug .)

They **cause infection in humans** (respiratory , urinary mucosa) , Note that they are also **found in respiratory tract of animals (birds) .**

2 types of this bacteria :

1- **Mycoplasma pneumonia**
2- **Ureaplasma urealyticum** → subtypes **: a. M.hominis .**
b. M.genitalium .

1) Mycoplasma pneumonia :

A **pathogen** that cause a **mild infection**s (**pharyngitis , bronchitis , pneumonia**) , in **teenagers** and **young adults , less in elderly persons .**

Transmission of this bug occurs **via respiratory route .**

Incubation periode **: 2-3 weeks**

Symptoms : **Fever and dry cough** , sore throat .

Occur mostly at Autumn (Fall-Winter) .

Diagnosis : Not Detecteble via gram stain (remember no cell wall)

1- culture sputum in a special medium containing cholesterol and DNA , after 2-3 weeks (incub. Period) if a dome shaped colonies appear → +ive result .

PCR (Polymerase Chain Reaction) : is a biochemical technology in molecular biology to amplify a single or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence. wiki

2- PCR (Polymerase Chain Reaction) : a sputum sample used to test for presence of bacterial DNA (mycoplasma DNA) . as you know PCR works by magnifying a gene or a DNA sequence to raise its concentration to a detectable concentration to confirm its presence .
3- Serological test : infected persons produce a monoclonal IgM antibodies that can link a antigen on the RBC called "I" antigen , these antibodies can agglutinate RBC at 4C → so these antibodies are called cold agglutinins .

Treatment : using anti ribosomal antibiotics , No vaccine is available .

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2) Ureaplasma urealyticum :

They produce **Tiny colonies** when cultured .

They are part of the **Normal ORAL and GENITAL flora** , they are concerned with some infections like **(urethritis , cervicitis , vaginitis) , they are urease +ive .**

Dignosis and treatment : same as Mycoplasma pneumonia but a urine sample is taken rather than a sputum sample .

Good Luck ;)