

Week 1 Day 1:

Received a blood sample from a patient with a suspected bacterial infection. Carried out a blood culture to determine the presence of bacteria. Incubated the sample overnight at 37°C.

Week 1 Day 2:

Examined the blood culture for the presence of bacteria. Observed gram-positive cocci under the microscope. Conducted a catalase test and found that the bacteria were *Staphylococcus aureus*.

Week 1 Day 3:

Performed a creatinine test on a patient's urine sample. Used a colorimetric assay to measure the concentration of creatinine in the sample. Found that the patient's creatinine levels were within the normal range.

Week 1 Day 4:

Conducted a susceptibility test on the *S.aureus* isolated from the patient's blood culture. Used the Kirby-Bauer disk diffusion method to test the effectiveness of various antibiotics. Found that the bacteria were resistant to methicillin but susceptible to vancomycin.

Week 1 Day 5:

Prepared a bacterial smear from the *S. aureus* isolate and carried out a Gram stain. Observed purple-stained cocci under the microscope, indicating that the bacteria were Gram-positive.

Week 2 Day 1:

Received a blood sample from a patient with a suspected viral infection. Conducted a PCR test using specific primers for the influenza virus. Unfortunately, the test came back negative for influenza virus. I will investigate other possible viral infections that the patient could be experiencing.

Week 2 Day 2:

Continued my research on viral infections, focusing on the ones that can present with flu-like symptoms. Discovered that the patient's symptoms could be caused by the Epstein-Barr virus (EBV). Decided to perform a serological test for EBV on the patient's blood sample.

Week 2 Day 3:

Performed an EBV serological test on the patient's blood sample using an indirect immunofluorescence assay (IFA). The results showed the presence of EBV-specific IgM and IgG antibodies, indicating that the patient had recently been infected with the virus.

Week 2 Day 4:

Received a throat swab from a patient with suspected streptococcal pharyngitis. Conducted a rapid antigen test for Group A streptococcus (GAS) and the result was positive. Informed the patient and their physician so that appropriate treatment can be administered.

Week 2 Day 5:

Investigated the presence of *Candida albicans* in a patient's vaginal swab sample. Conducted a wet mount and found the characteristic budding yeast cells and hyphae under the microscope. Further investigation will be conducted to determine the severity of the patient's condition and the appropriate treatment.

Week 3 Day 1:

Received a sputum sample from a patient with a persistent cough. Conducted a Ziehl-Neelsen acid-fast stain and observed acid-fast bacilli under the microscope. The presence of acid-fast bacilli suggests the patient may have tuberculosis. Conducted a Mantoux test to confirm the diagnosis.

Week 3 Day 2:

Performed a Mantoux test on the patient by injecting purified protein derivative (PPD) into the skin. The test will be read in 48-72 hours to check for any induration, which is indicative of a positive test result. The patient has been informed of the test results and advised to return for a reading.

Week 3 Day 3:

Received a blood sample from a patient with elevated levels of amylase. Conducted an amylase test on the patient's serum and found elevated levels of amylase, indicating possible pancreatic disease. Informed the patient and their physician so that appropriate treatment can be administered.

Week 3 Day 4:

Investigated the presence of *Staphylococcus aureus* in a patient's nasal swab sample. Conducted a Gram stain and bacterial culture and found the presence of *S. aureus*. Conducted a sensitivity test and found that the bacteria were resistant to multiple antibiotics.

Week 3 Day 5:

Received a urine sample from a patient with a suspected urinary tract infection (UTI). Conducted a urinalysis and found that the patient had leukocytes, nitrites, and elevated levels of protein in their urine, indicating a UTI. Conducted a bacterial culture and sensitivity test and found that the bacteria causing the UTI was *Escherichia coli*, which was susceptible to ciprofloxacin.

Week 4 Day 1:

Received a blood sample from a patient for a cholesterol test. Conducted a lipid panel test and found that the patient had high levels of low-density lipoprotein (LDL) cholesterol and low levels of high-density lipoprotein (HDL) cholesterol. Informed the patient and their physician so that appropriate treatment can be administered.

Week 4 Day 2:

Received a swab sample from a patient with suspected chlamydia infection. Conducted a nucleic acid amplification test (NAAT) for *Chlamydia trachomatis* on the sample. The test result was positive for chlamydia infection. Informed the patient and their physician so that appropriate treatment can be administered.

Week 4 Day 3:

Investigated the presence of *Streptococcus pneumoniae* in a patient's sputum sample. Conducted a Gram stain and bacterial culture, and found the presence of *S. pneumoniae*. Conducted a sensitivity test and found that the bacteria were susceptible to penicillin.

Week 4 Day 4:

Received a blood sample from a patient with suspected iron deficiency anemia. Conducted a complete blood count and iron panel tests, and found low levels of hemoglobin, hematocrit, and serum iron. The patient has been advised to undergo further evaluation for the cause of their anemia.

Week 4 Day 5:

Investigated the presence of *Trichomonas vaginalis* in a patient's vaginal swab sample. Conducted a wet mount and observed motile flagellated protozoa under the microscope. Conducted a confirmatory test with a PCR assay and found the presence of *T. vaginalis*, confirming the diagnosis of trichomoniasis. Informed the patient and their physician so that appropriate treatment can be administered.