University of Szeged, Albert Szent-Györgyi Medical School
Dean's Office, Foreign Students' Secretariat
6 Szőkefalvi-Nagy Béla u., H-6720 Szeged, Hungary
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LETTER OF ACCEPTANCE

2 weeks/60 hrs of medical microbiology practice

Name of the student:…….....

Period of practice:……...

Number of weeks: ……..

Name of the hospital/clinic:…….……...

Address of the hospital/clinic: ……

Medical school/university the hospital is affiliated with: ..……..……..……

……

Contact person : ……..

Phone number: ……

E-mail address: ……...

The above-named 6th year student is accepted to perform his/her compulsory practice at our institution for the period mentioned above. He/She is entitled to complete the tasks listed on page 2 of this form.

Date:……..

Signature:…… Stamp

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MEDICAL MICROBIOLOGY PRACTICE

I. BACTERIOLOGY LABORATORY

Observation of bacteriological workflows, participation in sample processing, culturing, identification, and antimicrobial susceptibility testing.

1. Preparation of Culture Media

- Observing different types of media and their uses (e.g., blood agar, MacConkey, Sabouraud, etc.)
- Participating in the preparation and sterilization of media (autoclaving)
- Learning quality control steps (control inoculations)
- Occupational safety and hygiene regulations

2. Urine Laboratory

- Sample reception, registration, transport requirements
- Microscopic examination of urine sediment, performing cultures
- Colony counting, evaluation of colony morphology
- Recognition and documentation of common pathogens

3. Enteric Laboratory

- Processing stool samples: use of selective media (e.g., XLD, SS)
- Isolation of Salmonella, Shigella, Campylobacter
- Use of biochemical tests (e.g., TSI, urease)
- Interpretation of results

4. Blood Culture and STD Laboratory

- Handling and incubation of blood cultures, investigation of positive bottles
- Gram staining, identification with MALDI-TOF
- Processing STD samples: culturing Neisseria gonorrhoeae, microscopic examinations
- Antibiotic susceptibility testing (E-test, disk diffusion)

5. Mixed and Anaerobic Laboratory

- Processing wound, respiratory, ear, nose, and throat samples
- Anaerobic conditions, microaerophilic culturing
- Special isolation techniques and identification methods
- Communication with clinicians, prioritizing urgent samples

II. MOLECULAR BIOLOGY LABORATORY

Nucleic acid extraction, PCR technologies, real-time PCR, multiplex PCR, contamination prevention.

6. Preparation and Extraction Phase

- Manual and automated DNA/RNA extraction procedures
- Sample processing and inactivation rules
- Preparation of PCR components, pipetting techniques
- Avoiding contamination, workflow separation

7. Amplification and Evaluation

- Principles of real-time PCR, setting cycle parameters
- Interpretation of FAM, VIC, ROX channels
- Validation criteria, role of positive and negative controls
- Data evaluation, reporting protocol

8. Viral Serology Laboratory

ELISA, CLIA, rapid tests, antibody and antigen assays.

- Verification of sample receipt, centrifugation
- Preparation of ELISA plates, adherence to incubation times
- Familiarization with automated serology systems
- Serological diagnosis of infectious diseases (HBV, HCV, HIV, EBV, CMV)
- Data evaluation, interpretation of gray zones

9. Parasitology

Microscopic examination of stool samples, identification of protozoa and helminths.

- Sample preparation: native, iodine-stained, and concentration techniques
- Basics of trichrome staining and acid-fast staining
- Morphology of common parasites: Giardia, Entamoeba, Ascaris, etc.
- Overview of direct antigen detection methods

10. Mycology

Identification of yeasts and filamentous fungi, culturing, microscopic examinations.

- Initiating fungal cultures on Sabouraud and chromogenic media
- Differentiation of Candida species
- Culturing dermatophytes, their microscopic features
- Significance of respiratory fungi (e.g., Aspergillus)
- Overview of antifungal susceptibility testing