T.C.
MERSİN UNIVERSITY
INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF MEDICAL BIOLOGY

GRADUATE PROGRAMS

2025

HISTORY

- Medical Biology Department was established on September 30, 1998, with the appointment of Assist. Prof. Dr. Etem AKBAŞ under the name of Mersin University Faculty of Medicine, Department of Medical Biology and Genetics. Assist. Prof. Dr. Nurcan ARAS ATEŞ was appointed on September 23, 1999, and Prof. Dr. Ali MATUR, a faculty member of the Department of Medical Biology and Genetics at Çukurova University Faculty of Medicine, was appointed on November 12, 1999, in accordance with Article 40/b of the Higher Education Law No. 2547 and served until October 18, 2001. Assoc. Prof. Dr. M. Emin ERDAL started working on February 22, 2000. Assist. Prof. Dr. İ. Ömer BARLAS joined on September 15, 2005, and Assist. Prof. Dr. Mustafa Ertan AY and Assist. Prof. Dr. Özlem İZCİ AY started on October 4, 2006. Prof. Dr. Serdal ARSLAN was incorporated into department by the Mersin University Rectorate in August 2021. The Master's Program began in the Spring Semester of the 1999–2000 academic year, and the Doctorate Program was launched in the Fall Semester of the 2002–2003 academic year.Our Department currently operates within the Faculty of Medicine, Department of Basic Medical Sciences building on the Mersin University Çiftlikköy Campus, with 7 faculty members — 6 of whom have received the title of Associate Professor in the field of Medical Biology and Genetics (Health Sciences) and 1 in the field of Biology (Natural Sciences), along with one Biologist (PhD in Biochemistry) and one Health Technician.

ACADEMIC STAFF

Faculty Members with an Academic Background in Health Sciences, Medical Biology and Genetics:

Prof. Dr. M. Emin Erdal
Prof. Dr. Etem Akbaş
Prof. Dr. İ. Ömer Barlas (Head of Department)
Prof. Dr. Nurcan Aras
Prof. Dr. Özlem İzci Ay
Assoc. Prof. Dr. Mustafa Ertan Ay

Faculty Members with an Academic Background in Natural Sciences and Mathematics, Biology:

Prof. Dr. Serdal Arslan

FILEDS OF RESEARCH

Our department's main research areas include the analysis of mutations/genetic polymorphisms in hereditary genetic diseases rooted in genetic alterations (such as single-gene and multifactorial genetic disorders), as well as in acquired genetic diseases (e.g., cancer); gene expression studies; identification of abnormalities in epigenetic mechanisms (including miRNA analyses, methylation analyses, etc.); investigation of the effects of environmental factors (such as radiation, radiofrequency waves, carcinogens, etc.) on diseases; and cytogenetic analyses at the chromosomal level.

According to the 2025 data from the **Web of Science** database, there are more than **250 SCI and SCI-E indexed research articles** affiliated with our department. In addition, there are numerous presentations delivered at international and national congresses, along with several awards received.

PROGRAM COMPETENCIES

1. Demonstrates advanced theoretical and practical knowledge in medical biology, including molecular biology, genetics, epigenetics, cytogenetics, and related interdisciplinary fields.
2. Designs and conducts independent scientific research in medical biology using appropriate methodologies, statistical tools, and laboratory techniques in accordance with ethical and safety standards.
3. Critically evaluates scientific literature, identifies gaps in current knowledge, and develops novel research hypotheses based on evidence-based approaches.
4. Performs advanced molecular and cytogenetic techniques, including DNA/RNA isolation, PCR, RT-PCR, gene expression profiling, sequencing, miRNA and methylation analysis, and cell culture applications.
5. Analyzes and interprets genetic mutations, polymorphisms, and epigenetic modifications involved in hereditary and acquired diseases, particularly monogenic, multifactorial, and cancer-related conditions.
6. Demonstrates the ability to integrate environmental-genetic interactions in disease mechanisms, including the role of environmental agents (e.g., radiation, carcinogens, radiofrequency) on genome stability and gene expression.
7. Utilizes bioinformatics tools and databases to manage, analyze, and interpret large-scale genomic and transcriptomic data.
8. Communicates scientific findings effectively, both orally and in writing, in national and international academic environments; prepares scientific articles, theses, and project reports in accordance with academic and publication standards.
9. Collaborates in multidisciplinary research teams, demonstrates responsibility, leadership, and the ability to coordinate scientific projects in academic or industrial research settings.
10. Follows current developments in medical biology and genetics, and adopts a lifelong learning approach for personal and professional development.
11. Demonstrates a commitment to scientific, social, and ethical responsibility in research, experimental design, data handling, and the dissemination of results.

EMPLOYMENT OPPORTUNITIES

Graduates with a Master's or Ph.D. in Medical Biology are employable in academia, healthcare, biotechnology, and R&D sectors in various roles:

- **Academic Institutions**: Can work as faculty members, research assistants, or postdoctoral researchers at universities.
- **Healthcare Facilities**: Eligible for positions such as genetic laboratory analysts or consultants in genetic diagnosis labs, hospital molecular genetics units, and private laboratories.
- **R&D and Biotechnology Industry**: Employed as project specialists, molecular biologists, or quality control officers in public and private research centers and biotech companies.
- **Pharmaceutical and Clinical Research**: Participate in drug development, clinical trials, and bioinformatics analysis.
- **Public Institutions**: Work as experts or inspectors in government bodies such as the Ministry of Health and Forensic Medicine Institutes.

CONTACT

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