Berfin Doğa KOÇKAYA

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EDUCATION

PhD

Ankara University, Biotechnology Institute, Department of Biotechnology, Ankara **(2023-)**
GPA: 3,90
***Thesis Title*:** Investigation of the Efficacy of ABCB1 siRNA and Docetaxel-Loaded M1 Macrophage Extracellular Vesicle-Based Drug Delivery System on Docetaxel-Resistant Breast Carcinoma Cell Lines

Master's degree

Hacettepe University, Department of Biology, Department of Molecular Biology, Ankara **(2020-2023)**
GPA: 4,00
***Thesis Title*:** Investigation of the Regulatory Effects of Mesenchymal Stem Cell Extracellular Vesicles on Epithelial Barrier Damage in Epithelium-Eosinophil Co-Culture System

Bachelor's degree

Baskent University, Department of Molecular Biology and Genetics, Ankara **(2016-2020)**
GPA: 3,19 (Honor Student)
Graduation Project: *Design, Domestic Production and Commercialization of 50-100-1500 bp DNA Ladders*
Other Projects (During BSc)

- *Genome-Wide Identification of DOF Gene Family in Theobroma cacao.*
- *Comparison of Microarray Data of Arabidopsis thaliana, Populus nigra and Hordeum vulgare Exposed to Boron Toxicity and Identification of Common Genes with Altered Expression Levels.*

EXPERIENCES

ACADEMIC EXPERIENCE

- Research Assistant, Baskent University, Department of Molecular Biology and Genetics, (2023-)
  Courses Given: Biochemistry Laboratory, Cell Biology Laboratory, Cell Culture Laboratory, Molecular Biology and Genetic Research Techniques

SCHOLARSHIPS

- TÜBİTAK, 2211/A Domestic PhD Scholarship
- TÜBİTAK, 2210/A Domestic Master's Scholarship
- TÜBİTAK, 2224-A International Scientific Activities Participation Support Program Scholarship
- Baskent University, Honor Student, Success Scholarship

INTERNSHIPS

- Compulsory Summer Internship; Hacettepe University, Department of Biology, Department of Molecular Biology, Ankara/TURKEY (2019)
- Volunteer Internship; Ankara University, Institute of Biotechnology, Ankara/TURKEY (2018)
- Volunteer Internship; Hacettepe University, Department of Biology, Department of Zoology, Ankara/TURKEY (2018)

AWARDS

- Baskent University Biotech Technology Development Center, Innovation Camp ‘Ideathon’, Second Prize, "Plastisphere" 13-19 December 2021, Ankara/Türkiye

PROJECTS

- TUBITAK, 1001 Project, Investigation of the Efficacy of ABCB1 siRNA and Docetaxel-Loaded M1 Macrophage Extracellular Vesicle-Based Drug Delivery System on Docetaxel-Resistant Breast Carcinoma Cell Lines. (2025-Ongoing)
- TUSEB, A1-01 Project, Investigation of the Effect of Selected miRNAs on AHNAK Protein Regulation from Docetaxel and Doxorubicin-Resistant Breast Cancer Cells with Bioinformatic Approaches. (2024-Ongoing)
- Baskent University, BAP Project, In vitro evaluation of the healing effect of puerarin, an extract of plants from the Pueraria genus, on epidermal wounds. (2024-Ongoing)
- Baskent University, BAP Project, Comparison of different media contents effective in differentiating Wharton's jelly mesenchymal stem cells into cardiomyocytes. (2024-Ongoing)
- TÜBİTAK, 2209 Project, Obtaining Overexpression Vector Cassette for Increasing Expression of miRNA502-3p in Doxorubicin Resistant Cells. (2023-2024)
- TÜBİTAK, 1002 Project, Investigation of Regulatory Effects of Mesenchymal Stem Cell Exosomes on Epithelial Barrier Damage in Epithelial-Eosinophil Co-Culture System. (2022-2023)
- HU BAP, Rapid Support Project, Investigation of cell damage response in human nasal and bronchial epithelial cell lines stimulated with Der p6 and Cup a1 allergens and the contribution of eosinophils to this response. (2021-2023)
- TUSEB, Group A Urgent R&D Project, Investigation of the effects of house dust mite and pollen allergen exposure on nasal and epithelial cell death pathways in eosinophilic inflammation conditions. (2022-2023)
- TÜBİTAK, 1002 Project, Investigation of the effect of antioxidant therapy on smoking-related methylation profile in upper respiratory tract epithelial cells. (2022-2023)
- HU BAP, Rapid Support Project, Investigation of Oxidative Stress and Antioxidant Response in Human Neutrophil Cell Line Stimulated with Cigarette Smoke Condensate and Tert-Butyl Hydroperoxide. (2020-2021)
- HU BAP, Effect of Epithelial Cell-Derived Serpinb1 on Neutrophil Elastase-Associated Anti-Apoptotic and Pro-Apoptotic Pathways. (2020-2021)
- Selcuk University BAP, Evaluation of the Relationship Between Telomere Length, Telomerase Activity, Oxidative Stress Levels and Response to Lithium Treatment in Patients with Bipolar Disorder Using Lithium. (2020-2022)

PUBLICATIONS

- H. AKEL BİLGİC, B. KILIC, **B.D. KOCKAYA**, B.E. SARAC, A. KILIC SULOGLU, O. KALAYCI, C. KARAASLAN, Oxidative stress stimulation leads to cell-specific oxidant and antioxidant responses in airway resident and inflammatory cells, Life Sciences, 2022, 121358, ISSN 0024-3205, https://doi.org/10.1016/j.lfs.2022.121358

PRESENTATIONS AND POSTERS

PRESENTATIONS

- M.A. AYKAC, **B.D. KOCKAYA**, K.A. AKYÜREK, Ö. DARCANSOY-İŞERİ, Alteration of Mir-502-3p and Mir-101-3 and the NHEJ Pathway in DNA Damage Response of Doxorubicin-resistant Breast Carcinoma Cells, Oral Abstract, European Biotechnology Congress, October 2024, İstanbul/TÜRKİYE
- V. ERBASAN, K. ALTINBAŞ, **B.D. KOÇKAYA**, E.B. DOĞAN, İ.Ç. KARAASLAN, Evaluation of the relationship between lithium treatment response and telomere length, telomerase activity and

oxidative stress levels in euthymic patients with bipolar disorder, Oral Abstract, Bipolar Disorders, 2023

- **B.D. KOCKAYA**, E.B. DOGAN, G. ARIK, H. AKEL BILGIC, C. KARAASLAN, Therapeutic Effects of Mesenchymal Stem Cell Exosomes on Inflammatory Responses and Epithelial Barrier Damage in Epithelial-Eosinophil Co-Culture System, Oral Abstract Session, EAACI Hybrid Congress, June 2023, Hamburg/GERMANY
- E.B. DOGAN**, B.D. KOCKAYA**, B.E. SARAC, B. KILIC, H. AKEL BILGIC, C. KARAASLAN, The Effect of Allergens DerP 6 and Cup A1 On the Different Cell Death Pathways in Bronchial and Nasal Epithelial Cells, Flash talks, EAACI Hybrid Congress, June 2023, Hamburg/GERMANY

POSTERS

- Investigation of Oxidative Stress and Antioxidant Response in Human Neutrophil Cell Line Stimulated with Cigarette Smoke Condensate and Tert-Butyl Hydroperoxide, EAACI Hybrid Congress, July 2022, Prague/CZECH REPUBLIC
- Effect of Epithelial Cell-Derived Serpinb1 on Neutrophil Elastase-Mediated Cell Death, EAACI Hybrid Congress, July 2022, Prague/CZECH REPUBLIC
- Effect of Epithelial Cell-Derived Serpinb1 on Neutrophil Elastase-Associated Anti-Apoptotic and Pro-Apoptotic Pathways, XXVIII. National Congress of Allergy and Clinical Immunology, October 2021, Antalya/TURKEY
- Investigation of Oxidative Stress and Antioxidant Response in Human Neutrophil Cell Line Stimulated with Cigarette Smoke Condensate and Tert-Butyl Hydroperoxide, XXVIII. National Congress of Allergy and Clinical Immunology, October 2021, Antalya/TURKEY
- Comparison of Microarray Data of Arabidopsis thaliana, Populus nigra and Hordeum vulgare Exposed to Boron Toxicity and Identification of Common Genes with Altered Expression Levels, 20th International Congress of Biotechnology, October 2019, Ankara/TURKEY

MEMBERSHIPS

- The European Academy of Allergy and Clinical Immunology (EAACI), Junior Member (2022)

CERTIFICATES

- Stem Cell and Regenerative Medicine Certificate (2022)
- Turkey Medicines and Medical Devices Agency, Responsible Manager Qualification (2022)
- Turkey Medicines and Medical Devices Agency, Sales Promotion Personnel Qualification (2022)
- Turkey Medicines and Medical Devices Agency, Clinical Support Personnel Qualification (2022)
- Experimental Animal Use Certificate (2025)

SKILLS

- Cell Culture (2 and 3D cultures, Co-culture, epithelial cell differentiation with ALI-culture systems, mesenchymal stem cell culture, inflammatory cell culture)
- Cell Viability and Cytotoxicity Tests (MTT, EtBr/Calcein AM staining, LDH test, AO/PI staining, caspase activity measurements)
- Extracellular vesicle isolation and characterization (Ultracentrifugation, SEM imaging, Nanoparticle Tracking Analysis)
- Drug loading into extracellular vesicles, Drug release and loading efficacy measurements
- Protein analyses; ELISA, Western Blot, Gelatin Zymography, Immunocytochemistry stains
- Flow cytometry
- PCR, Real-Time PCR
- Microbiological culture, Transformation, Transfection, Gene silencing

LANGUAGE PROFICIENCY

Higher Education Institutions Foreign Language Exam (YÖKDİL): **91,25/100**