

Res. Asst. PhD MERVE AKKULAK

Personal Information

Office Phone: [+90 312 210 6462](tel:+903122106462)

Email: makkulak@metu.edu.tr

Web: <https://avesis.metu.edu.tr/makkulak>

International Researcher IDs

ScholarID: [qe3yRp8AAAAJ](https://orcid.org/0000-0003-2834-7682)

ORCID: 0000-0003-2834-7682

Publons / Web Of Science ResearcherID: AAZ-7025-2020

ScopusID: 57264405800

Yoksis Researcher ID: 264147

Education Information

Doctorate, Middle East Technical University, Faculty of Arts and Sciences, Department of Molecular Biology and Genetics, Turkey 2016 - 2024

Postgraduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, Turkey 2014 - 2016

Undergraduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, Turkey 2009 - 2014

Foreign Languages

English, C2 Mastery

German, A1 Beginner

Dissertations

Doctorate, Investigating the role of CYP2W1 in cancer progression , Middle East Technical University, Faculty Of Arts And Sciences, Department of Molecular Biology and Genetics, 2024

Postgraduate, Effects of resveratrol and quercetin on vitamin d metabolizing cytochrome p450 enzymes , Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, 2016

Research Areas

Life Sciences, Biochemistry, Molecular Biology and Genetics

Academic Titles / Tasks

Research Assistant, Middle East Technical University, Faculty of Arts and Sciences, Department of Biology, 2017 - Continues

Courses

Clinical Biochemistry, Undergraduate, 2024 - 2025

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Modulation of Caco-2 Colon Cancer Cell Viability and CYP2W1 Gene Expression by Hesperidin-treated Lacticaseibacillus rhamnosus GG (LGG) Cell-free Supernatants.**
Akkulak M., Evin E., Durukan O., Celebioglu H. U., Adali O.
Anti-cancer agents in medicinal chemistry, vol.24, pp.372-378, 2024 (SCI-Expanded)
- II. **Xenogenic Neural Stem Cell-Derived Extracellular Nanovesicles Modulate Human Mesenchymal Stem Cell Fate and Reconstruct Metabolomic Structure**
DERKUŞ B., Isik M., Eylem C. C., ERGİN İ., Camci C. B., Bilgin S., ELBÜKEN Ç., ARSLAN Y. E., AKKULAK M., ADALI O., et al.
ADVANCED BIOLOGY, vol.6, no.6, 2022 (SCI-Expanded)
- III. **Association of cholesterol 7 α -hydroxylase (CYP7A1) promoter polymorphism (rs3808607) and cholesterol 24S-hydroxylase (CYP46A1) intron 2 polymorphism (rs754203) with serum lipids, vitamin D levels, and multiple sclerosis risk in the Turkish population**
SEZER E., CAN DEMİRDÖĞEN B., Demirkaya S., Bulut G., AKKULAK M., EVİN E., ADALI O.
Neurological Sciences, vol.43, no.4, pp.2611-2620, 2022 (SCI-Expanded)
- IV. **Effect of cisplatin treatment on protein expression of vitamin D metabolizing CYP24A1 in PC3 cell line**
EVİN E., Durukan O., AKKULAK M., ADALI O.
FEBS OPEN BIO, vol.8, pp.326, 2018 (SCI-Expanded)
- V. **Effect of quercetin on mRNA and protein expressions of vitamin D metabolizing CYP27B1 and CYP24A1 in human embryonic kidney cell line (HEK-293)**
Akkulak M., Evin E., Durukan Ö., Özhan G., Adali O.
FEBS OPEN BIO, vol.8, pp.352, 2018 (SCI-Expanded)
- VI. **Alteration of protein and gene expressions of Hexokinase II in PC3 cell lines by cisplatinmetformin combination treatment**
Durukan Ö., Akkulak M., Evin E., Arslan Ş., Adali O.
FEBS OPEN BIO, vol.8, pp.352, 2018 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Angiogenic potential of CYP2W1 gene in tumorigenesis**
Akkulak M., Adali O., Durukan Ö.
FEBS2023, Tours, France, 8 - 12 July 2023, pp.74
- II. **EFFECT OF ONCOFETAL CYP2W1 GENE ON EPITHELIAL-MESENCHYMAL TRANSITION MARKERS**
Akkulak M., Durukan Ö., Evin E., Adali O.
International Biochemistry Congress 2022, İzmir, Turkey, 26 - 30 October 2022, vol.50, no.49, pp.136-137
- III. **Investigating the role of CYP4X1 gene during brain tumor angiogenesis via RNAi mediated gene repression**
Durukan Ö., Akkulak M., Evin E., Adali O.
TBS International Biochemistry Congress 2022 - 33th National Biochemistry Congress, İzmir, Turkey, 26 - 30 October 2022, vol.50, no.50, pp.137
- IV. **Analysis of Protein and mRNA Expressions of CYP1A1 and CYP2E1 Enzymes In Liver, Colon And Prostate Cancer Cell Lines to Study Drug and Carcinogen Metabolism**
Evin E., Karakurt S., Akkulak M., Adali O.
International Congress on Advances in BioScience and Biotechnology, Sarajevo, Bosnia And Herzegovina, 25 - 29 October 2017, pp.59

- V. **Effect of resveratrol on mRNA and protein expressions of Vitamin D metabolizing CYP24A1 in human embryonic kidney cell line (HEK-293)**
AKKULAK M., EVİN E., DURUKAN Ö., ÖZHAN H. G., ADALI O.
10th International Symposium on Health Informatics and Bioinformatics (HIBIT 2017), 28 - 30 June 2017
- VI. **Metformin-Cisplatin combination treatment alters gene and protein expressions of CYP17A1 in LNCaP cell line**
DURUKAN Ö., AKKULAK M., SENA GJOTA E., ARSLAN Ş., ADALI O.
10th International Symposium on Health Informatics and Bioinformatics (HIBIT 2017), 28 - 30 June 2017
- VII. **Cytotoxic and antioxidant activities of three Tanacetum L Taxa from Turkey**
ARITULUK Z. C., AKKULAK M., KARAKURT S., ADALI O., GENÇLER ÖZKAN A. M.
5th International Molecular Biology and Biotechnology Congress, ÜSKÜP, Macedonia, 25 - 29 August 2016
- VIII. **Effects of plant phenolic compounds tannic acid and resveratrol on prostate cancer metastasis**
KARAKURT S., AKKULAK M., EVİN E., ADALI O.
FEBS EMBO 2014 Conference, Paris, France, 30 August - 04 September 2014, vol.281, pp.460

Supported Projects

- ADALI O., AKKULAK M., POLAT J. M., TÜRKÖZ O., Project Supported by Higher Education Institutions, Antipsikotik ilaç klorpromazinin potansiyel antikanser etki mekanizmasının insan glioblastom hücre hattında nitrik oksit sentaz enzimleri ve nitrik oksit seviyesine bakılarak araştırılması, 2023 - Continues
- Akkulak M., Adali O., Yılmaz E., Acar A., Derkuş B., TÜBİTAK - AB COST Project, Tümör-İliskili Makrofajların Eksozom Aracılı Post-Tümörijenik Etki Mekanizmalarının Kolorektal Kanser Modelinde In Vitro Ve In Vivo Düzeyde Detaylı Olarak İncelenmesi, 2023 - 2026
- Adalı O., Akkulak M., TUBITAK Project, Cyp2w1 Geninin Metastaz Sürecindeki Rolünün RNA İnterferans (RNAi) Yöntemi İle Susturularak İncelenmesi, 2021 - 2022
- ADALI O., DURUKAN Ö., AKKULAK M., EVİN E., Project Supported by Higher Education Institutions, CYP4X1 geninin beyin tümörü anjiyogenezindeki rolünün RNA interferans (RNAi) yöntemi ile susturularak incelenmesi, 2021 - 2022
- ADALI O., AKKULAK M., EVİN E., DURUKAN Ö., Project Supported by Higher Education Institutions, CYP2W1 geninin RNA interferans (RNAi) yöntemi ile susturularak epitelyal mezenkimal geçişteki rolünün kolon kanser hücre hattında incelenmesi, 2020 - 2021
- ADALI O., AKKULAK M., Project Supported by Higher Education Institutions, Benzimidazol ve Benzotiyazol Türevlerinin Antikanser Etkilerinin İnsan Adenokarsinom Hücrelerinde Araştırılması, 2020 - 2021
- ADALI O., AKKULAK M., DURUKAN Ö., EVİN E., GÜRAY N. T., Project Supported by Higher Education Institutions, Hekzokinaz II proteininin prostat kanseri hücre hatlarındaki ekspresyonunun antidiyabet ve antikanser ilaç kombinasyonlarına bağlı değişimi, 2018 - 2019

Invited Talks

Conference, 3rd International Turkish World Congress of Multiple Sclerosis, Turkey, April 2021