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Personal Information

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International Researcher IDs

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Education Information

Doctorate, Koc University, Faculty Of Engineering, Kimya ve Bıyoloji Mühendisliği, Turkey 2013 - 2019

Postgraduate, Michigan State University, FEN, KİMYA, United States Of America 2010 - 2013

Postgraduate, Bogazici University, Faculty Of Arts And Sciences, Department Of Chemistry, Turkey 2008 - 2010

Undergraduate, Bogazici University, Faculty Of Arts And Sciences, Department Of Chemistry, Turkey 2003 - 2008

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Identification of small molecules regulating the cryptochrome activity in the mammalian circadian clock, Koc University, Faculty Of Engineering, Kimya ve Biyoloji Mühendisliği, 2019

Postgraduate, Uzama faktörü tunun GTPaz etkinliğindeki önemli aminoasitlerin rollerinin araştırılması, Bogazici University, Faculty Of Arts And Sciences, Department Of Chemistry, 2010

Research Areas

Molecular Biophysics, Molecular Biochemistry, Structural Biology, Biotechnology, Genetic Disorders, Protein Engineering

Academic Titles / Tasks

Assistant Professor, Istanbul University, Faculty of Science, Department of Biology, 2021 - Continues

Research Assistant PhD, Koc University, Institute Of Science, Kimya ve Biyoloji Mühendisliği, 2019 - 2021

Research Assistant, Koc University, Faculty Of Engineering, Kimya ve Biyoloji Mühendisliği, 2013 - 2019

Research Assistant, Michigan State University, FEN, Kimya, 2010 - 2013

Research Assistant, Bogazici University, Faculty Of Arts And Sciences, Department Of Chemistry, 2009 - 2010

Courses

PROTEİN MÜHENDİSLİĞİ, Undergraduate, 2022 - 2023

BİYOLOJİK SAAT, Postgraduate, 2022 - 2023

BİLİMSEL VERİLERİN SUNUMU, Postgraduate, 2020 - 2021

GENETIC ENGINEERING AND BIOTECHNOLOGY, Undergraduate, 2021 - 2022

THE REMARKABLE SCIENTISTS IN BIOLOGY, Undergraduate, 2020 - 2021

GENERAL BIOLOGY, Undergraduate, 2020 - 2021

KİŞİSEL PROJE II, Undergraduate, 2020 - 2021

BİLGİSAYAR DESTEKLİ İLAÇ TASARIMI, Doctorate, 2021 - 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Dynamic regulation of the serine loop by distant mutations reveals allostery in cryptochrome1**
Ozcan O., Gul S., Kavakli I. H.
Journal of Biomolecular Structure and Dynamics, vol.42, no.19, pp.10417-10428, 2024 (SCI-Expanded)
- II. **TW68, cryptochromes stabilizer, regulates fasting blood glucose levels in diabetic ob/ob and high fat-diet-induced obese mice**
Surme S., Ergun C., Gul S., AKYEL Y. K., Gul Z. M., Ozcan O., Ipek O. S., Akarlar B. A., Ozlu N., TAŞKIN A. C., et al.
Biochemical Pharmacology, vol.218, 2023 (SCI-Expanded)
- III. **Diurnal Changes in Capecitabine Clock-Controlled Metabolism Enzymes Are Responsible for Its Pharmacokinetics in Male Mice**
Akyel Y. K., Ozturk Civelek D., Ozturk Seyhan N., Gul Ş., Gazioglu I., Pala Kara Z., Lévi F., Kavakli I. H., Okyar A.
JOURNAL OF BIOLOGICAL RHYTHMS, vol.38, no.2, pp.171-184, 2023 (SCI-Expanded)
- IV. **Discovery of a small molecule that selectively destabilizes Cryptochrome 1 and enhances life span in *p53* knockout mice**
Gul Ş., Akyel Y. K., Gul Z. M., Isin S., Ozcan O., Korkmaz T., Selvi S., Danis I., Ipek O. S., Aygenli F., et al.
NATURE COMMUNICATIONS, vol.13, no.1, 2022 (SCI-Expanded)
- V. **Analysis of ACE2 and TMPRSS2 coding variants as a risk factor for SARS-CoV-2 from 946 whole-exome sequencing data in the Turkish population**
DUMAN N., Tuncel G., BİŞGİN A., TUĞ BOZDOĞAN S., Sag S. O., GÜL Ş., Kiraz A., Balta B., Erdogan M., Uyanik B., et al.
JOURNAL OF MEDICAL VIROLOGY, vol.94, no.11, pp.5225-5243, 2022 (SCI-Expanded)
- VI. **The secondary pocket of cryptochrome 2 is important for the regulation of its stability and localization.**
Parlak G. C., Camur B. B., Gul Ş., Ozcan O., Baris I., Kavakli I. H.
The Journal of biological chemistry, vol.298, no.9, pp.102334, 2022 (SCI-Expanded)
- VII. **Proteome analysis of the circadian clock protein PERIOD2**
Gul H., Selvi S., Yilmaz F., Ozcelik G., Olfaz-Aslan S., Yazan S., Tiryaki B., Gul S., Yurtseven A., Kavakli I. H., et al.
PROTEINS-STRUCTURE FUNCTION AND BIOINFORMATICS, vol.90, pp.1315-1330, 2022 (SCI-Expanded)
- VIII. **Identification of novel small molecules targeting core clock proteins to regulate circadian rhythm**
Kavakli I. H., GÜL Ş., Turkay M.
Current Opinion in Chemical Engineering, vol.35, 2022 (SCI-Expanded)
- IX. **Birt-Hogg-Dube Syndrome: Diagnostic Journey of Three Cases from Skin to Gene**
Hasal E., Baskan E. B., Gul Ş., Dilektasli A. G., Sag S. O., Adird S. B., TEMEL Ş. G.
ANNALS OF DERMATOLOGY, vol.34, no.1, pp.66-71, 2022 (SCI-Expanded)
- X. **In Silico Analysis of a De Novo OTC Variant as a Cause of Ornithine Transcarbamylase Deficiency**
Ozdemir Y., Cag M., Gul Ş., Yuksel Z., Ergoren M. C.
APPLIED IMMUNOHISTOCHEMISTRY & MOLECULAR MORPHOLOGY, vol.30, no.2, pp.153-156, 2022 (SCI-Expanded)
- XI. **Structure-based design and classifications of small molecules regulating the circadian rhythm period**
Gul Ş., Rahim F., Isin S., Yilmaz F., Ozturk N., Turkay M., Kavakli I. H.
SCIENTIFIC REPORTS, vol.11, no.1, 2021 (SCI-Expanded)

- XII. **Identification of a Novel De Novo COMP Gene Variant as a Likely Cause of Pseudoachondroplasia**
Tuncel G., Akcan N., Gul Ş., Sag S. O., Bundak R., Mocan G., TEMEL Ş. G., Ergoren M. C.
APPLIED IMMUNOHISTOCHEMISTRY & MOLECULAR MORPHOLOGY, vol.29, no.7, pp.546-550, 2021 (SCI-Expanded)
- XIII. **In silico identification of widely used and well-tolerated drugs as potential SARS-CoV-2 3C-like protease and viral RNA-dependent RNA polymerase inhibitors for direct use in clinical trials**
Gul Ş., Ozcan O., Asar S., OKYAR A., Baris I., Kavakli I. H.
JOURNAL OF BIOMOLECULAR STRUCTURE & DYNAMICS, vol.39, no.17, pp.6772-6791, 2021 (SCI-Expanded)
- XIV. **In silico drug repositioning against human NRP1 to block SARS-CoV-2 host entry**
Gul S.
TURKISH JOURNAL OF BIOLOGY, vol.45, no.4, pp.442-463, 2021 (SCI-Expanded)
- XV. **Transcriptome analysis of the circadian clock gene BMAL1 deletion with opposite carcinogenic effects**
Emisoglu-Kulahli H., Gul Ş., Morgil H., Ozcan O., Aygenli F., Selvi S., Kavakli I. H., Öztürk N.
FUNCTIONAL & INTEGRATIVE GENOMICS, vol.21, no.1, pp.1-16, 2021 (SCI-Expanded)
- XVI. **Unique combination and in silico modeling of biallelic POLR3A variants as a cause of Wiedemann-Rautenstrauch syndrome**
TEMEL Ş. G., Ergoren M. C., Manara E., Paolacci S., Tuncel G., Gul Ş., Bertelli M.
EUROPEAN JOURNAL OF HUMAN GENETICS, vol.28, no.12, pp.1675-1680, 2020 (SCI-Expanded)
- XVII. **The Arg-293 of Cryptochrome1 is responsible for the allosteric regulation of CLOCK-CRY1 binding in circadian rhythm**
Gul Ş., AYDIN C., Ozcan O., Gurkan B., Surme S., Baris I., Kavakli I. H.
JOURNAL OF BIOLOGICAL CHEMISTRY, vol.295, no.50, pp.17187-17199, 2020 (SCI-Expanded)
- XVIII. **Human CRY1 variants associate with attention deficit/hyperactivity disorder**
Onat O. E., Kars M. E., Gul Ş., Bilguvar K., Wu Y., Ozhan A., Aydin C., Basak A. N., Trusso M. A., Goracci A., et al.
JOURNAL OF CLINICAL INVESTIGATION, vol.130, no.7, pp.3885-3900, 2020 (SCI-Expanded)
- XIX. **A CLOCK-binding small molecule disrupts the interaction between CLOCK and BMAL1 and enhances circadian rhythm amplitude.**
Doruk Y., Yarpavar D., Akyel Y., Gul Ş., Taskin A. C., Yilmaz F., Baris I., Ozturk N., Türkay M., Ozturk N., et al.
The Journal of biological chemistry, vol.295, no.11, pp.3518-3531, 2020 (SCI-Expanded)
- XX. **Identification and Characterization of a New Class of (6-4) Photolyase from Vibrio cholerae**
Dikbas U. M., Tardu M., Canturk A., Gul Ş., Ozcelik G., Baris I., Ozturk N., Kavakli I. H.
BIOCHEMISTRY, vol.58, no.43, pp.4352-4360, 2019 (SCI-Expanded)
- XXI. **Centriolar satellites are required for efficient ciliogenesis and ciliary content regulation**
Odabasi E., Gul Ş., Kavakli I. H., Firat-Karalar E. N.
EMBO REPORTS, vol.20, no.6, 2019 (SCI-Expanded)
- XXII. **DNA repair by photolyases**
Kavakli I. H., Ozturk N., Gul Ş.
DNA REPAIR, vol.115, pp.1-19, 2019 (SCI-Expanded)
- XXIII. **The Photolyase/Cryptochrome Family of Proteins as DNA Repair Enzymes and Transcriptional Repressors**
Kavakli I. H., Baris I., Tardu M., Gul Ş., Oner H., Cal S., Bulut S., Yarpavar D., Berkel C., Ustaoglu P., et al.
PHOTOCHEMISTRY AND PHOTOBIOLOGY, vol.93, no.1, pp.93-103, 2017 (SCI-Expanded)
- XXIV. **Glu-370 in the large subunit influences the substrate binding, allosteric, and heat stability properties of potato ADP-glucose pyrophosphorylase**
Seferoglu A. B., Gul Ş., Dikbas U. M., Baris I., Koper K., Caliskan M., Cevahir G., Kavakli I. H.
PLANT SCIENCE, vol.252, pp.125-132, 2016 (SCI-Expanded)
- XXV. **Conformational Sampling of Peptides in the Presence of Protein Crowders from AA/CG-Multiscale Simulations**
Predeus A. V., Gul Ş., Gopal S. M., Feig M.
JOURNAL OF PHYSICAL CHEMISTRY B, vol.116, no.29, pp.8610-8620, 2012 (SCI-Expanded)

- XXVI. **Selectivity in the aggregates of the chiral organolithium N-Boc-2-lithiopiperidine with a chiral ligand: a DFT study**
Ince H. H., Dedeoglu B., Gul Ş., Aviyente V., Coldham I.
MOLECULAR PHYSICS, vol.110, no.6, pp.353-359, 2012 (SCI-Expanded)
- XXVII. **Computational Study of Factors Controlling the Boat and Chair Transition States of Ireland-Claisen Rearrangements**
Gul Ş., Schoenebeck F., Aviyente V., Houk K. N.
JOURNAL OF ORGANIC CHEMISTRY, vol.75, no.6, pp.2115-2118, 2010 (SCI-Expanded)

Articles Published in Other Journals

- I. **A novel smart disinfection system using 3D-printed and electrically conductive composite hydrogel**
Khan S. A., Malik A. N., Velioglu B., Gul S., Kavaklı I. H., Lazoglu I.
Emergent Materials, 2024 (ESCI)
- II. **In Silico Analysis of BMAL1 and CLOCK SNPs in the Ensembl Database**
Gül Ş.
European Journal of Biology, vol.81, pp.125-135, 2022 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **The Structure-Based Molecular-Docking Screen Against Core Clock Proteins to Identify Small Molecules to Modulate the Circadian Clock**
Gül Ş., Kavaklı İ. H.
in: Circadian Regulation Methods and Protocols, Guiomar Solanas, Patrick -Simon Welz, Editor, Springer Nature, New York, pp.15-34, 2022
- II. **Kanserde DNA Tamiri Ve Tedavide DNA Tamir Yolakları**
Kavaklı İ. H., Gül Ş., Tardu M., Barış İ.
in: Kanser Moleküler Biyolojisi, Yusuf Baran, Editor, Kısayol Yayıncılık, İstanbul, pp.173-184, 2018

Refereed Congress / Symposium Publications in Proceedings

- I. **Effect of CLK8 on rhythmic transcriptome and replicative senescence in MRC-5 cells and further in vivo analysis**
Gül Ş., Okyar A., Kavaklı I. H.
11th International Drug Chemistry Conference, Antalya, Turkey, 9 - 12 March 2023
- II. **Dosing-time and cryptochrome dependent changes in oxaliplatin tolerability and pharmacokinetics**
Öztürk Seyhan N., Akyel Y. K., Gül Ş., Çelik M., Taşkın A. C., Sancar A., Kavaklı İ. H., Okyar A.
26th National and 1st International Pharmacology Congress, 10th Clinical Pharmacology Symposium, 9th Clinical Toxicology Symposium, İstanbul, Turkey, 4 - 06 November 2021, pp.280-281
- III. **Allosteric regulation of CRYs in mammalian circadian clock**
Özcan O., Gül Ş., Kavaklı İ. H.
ESCAPE-31: European Symposium on Computer Aided Process Engineering 2021, 6 - 09 June 2021, pp.1
- IV. **IDENTIFICATION OF SMALL ORGANIC MOLECULES THAT REDUCES HALF-LIFE OF CRYPTOCHROME-1 AND CRYPTOCHROME-2**
Sürme S., Gül Ş., Kavaklı İ. H.
85th Cold Spring Harbor Laboratory Symposium on Quantitative Biology, Biological Time Keeping, 1 - 05 June 2021, pp.1
- V. **Differential regulation of mammalian CRYs by allosterism in circadian clock**

Özcan O., Gül Ş., Kavaklı İ. H.

85th Cold Spring Harbor Laboratory Symposium on Quantitative Biology, Biological Time Keeping, 1 - 05 June 2021, pp.11-1

Supported Projects

TAŞKIN A. C., GEÇİN M. N., SÖĞÜT İ., TANRIVERDİ G., AYKAL M. B., GÜL Ş., KAÇAR S., BAKIRER ÖZTÜRK G., KAÇAR S., Project Supported by Higher Education Institutions, Borik asit takviyeli fare embriyo kültür medyumunun in vivo gelişim potansiyeli uzun vadeli etkilerinin araştırılması, 2022 - Continues

Gül Ş., Topçul M. R., Çetin İ., Çalışkan M., Okyar A., TÜBİTAK Project, İlaç yeniden konumlandırma metoduyla biyogüvenli SARS-CoV-2 replikonu kullanılarak SARS-CoV-2 inhibitörü bulunması, 2022 - 2025

ÇALIŞKAN M., KAVAKLI İ. H., GÜL Ş., Project Supported by Higher Education Institutions, Kriptokrom1 ikincil pakete bağlanan moleküllerin sirkadiyen saat üzerine olan etkilerinin incelenmesi, 2022 - 2024

ÇALIŞKAN M., KAVAKLI İ. H., GÜL Ş., Project Supported by Higher Education Institutions, Patojenik BMAL1 SNP'lerinin Sirkadiyen Saat Mekanizmasına Etkisinin Belirlenmesi, 2022 - 2024

ÖZTÜRK SEYHAN N., KAVAKLI İ. H., GÜL Ş., Project Supported by Higher Education Institutions, CLK 8 Molekülünün in vivo etkilerinin incelenmesi, 2022 - 2024

Scientific Refereeing

SCIENTIFIC REPORTS, Journal Indexed in SCI-E, November 2022

EUROPEAN JOURNAL OF BIOLOGY, Other Indexed Journal, August 2021

cyprus journal of Medical Sciences, Other journals, June 2021

TURKISH JOURNAL OF CHEMISTRY, Journal Indexed in SCI-E, June 2021

TURKISH JOURNAL OF BIOLOGY, Journal Indexed in SCI-E, May 2021

Metrics

Publication: 36

Citation (WoS): 342

Citation (Scopus): 347

H-Index (WoS): 9

H-Index (Scopus): 9