



## Assist. Prof. Dr. ARZU TEMİZYÜREK

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### EDUCATIONAL INFORMATION

Degree	University	Department	Year(s)
Doctoral Degree	Istanbul University	Sinirbilim Anabilim Dalı	2014 - 2019
Bachelor's Degree	Ankara University		2000 - 2005
Master's Degree	Ankara University	Ankara Veteriner Pr.	2000 - 2005

### RESEARCH AREAS

Neuroscience, Blood-brain barrier, Spreading depolarization

### ACADEMIC DUTIES

Duty	University	Area	Year(s)
Postdoctoral researcher	Harvard University	School of Medicine / Neurovascular Unit	2025 -
Assistant Professor	Altınbaş University	School of Medicine / Department of Physiology	2021 -
Postdoctoral Researcher	Koç University	School of Medicine / Department of Physiology	2018 - 2022

### ADMINISTRATIVE DUTIES

Duty	University	Year(s)
Laboratory Manager	Bogazici University	2010 - 2018

### ACADEMIC AND PROFESSIONAL MEMBERSHIPS

Organisation	Membership	Year(s)
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### NON-UNIVERSITY EXPERIENCE

Country	Organisation	Duty	Year(s)
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### BOOKS

Üst solunum yolu enfeksiyonları

TEMİZYÜREK ARZU

Kongre Yayınevi, 978-605-74070-1-6, 2022

Scientific Book Chapter(s)

The role of antioxidants and oxidative stress in neurodegenerative diseases and aging

TEMİZYÜREK ARZU

İksad Yayınevi, -ISBN: 978-625-8377-34-7, 2022

Scientific Book Chapter(s)

TEK SAĞLIK – 21. YÜZYILIN KARMAŞIK SAĞLIK SORUNLARIYLA YÜZLEŞMEK

Arzu Temizyurek, Adnan Serpen

DUVAR, 978-625-6945-00-5, 2024

Scientific Book Chapter(s)

Current Trends in Neurosciences

Emir Kiraz, Arzu Temizyurek, Mehmet Kaya, Nadir Arıcan, Nurcan Orhan

**BOOKS**

Istanbul Universitesi Yayinevi, 978-605-07-1765-5, 2024

Scientific Book Chapter(s)

**ARTICLES****Targeting the blood-brain barrier disruption in hypertension by ALK5/TGF-B type I receptor inhibitor SB-431542 and dynamin inhibitor dynasore.**

Muge Atis, Ugur Akcan, Canan U.Yilmaz, Deniz Altunsu, Ecem Ayvaz, Deniz Sertkaya, Arzu Temizyürek, Bulent Ahishali, Mehmet Kaya

Brain research, 2022

International DOI: 10.1016/j.brainres.2022.148071

**Blood-brain barrier targeted delivery of lacosamide-conjugated gold nanoparticles: Improving outcomes in absence seizures**

Arzu Temizyürek, Canan U. Yılmaz, Serkan Emik, Nurcan Orhan, Muge Atis, Ugur Akcan, Nadir Arican, Mutlu Kucuk, Candan Gurses, Bulent Ahishali, Mehmet Kaya

Epilepsy Research, 2022

International DOI: 10.1016/j.epilepsyres.2022.106939

**Targeted delivery of lacosamide-conjugated gold nanoparticles into the brain in temporal lobe epilepsy in rats.**

Canan Uğur Yılmaz, Serkan Emik, Nurcan Orhan, Arzu Temizyürek, Muge Atis, Ugur Akcan, Rouhollah Khodadust, Nadir Arican, Mutlu Kucuk, Candan Gurses, Bulent Ahishali, Mehmet Kaya

Life sciences, 2020

International DOI: 10.1016/j.lfs.2020.118081

**Effect of Probiotics on Parkinson's Disease Rating, Selected Gastrointestinal Measurements and Oxidative Stress Parameters in Parkinson's Disease: A Systematic Review of Randomized Controlled Trials**

Elif Sina Atak, Dilara Yıldız, Rümeysa, Rabia Kocatürk, Arzu Temizyürek, Öznur Özge Özcan, Türker Tekin Ergüze, Mesut Karahan, Nevzat Tarhan

International Journal of Neuroscience, 2021

International DOI: DOI:https://doi.org/10.1080/00207454.2022.2079506

**Use of Ketogenic Diet Therapy in Epilepsy with mitochondrial dysfunction: A Systematic and Critical Review**

R. R. Kocatürk, A. Temizyürek, E. Reis, S. Tur, Ş. Yılmaz, H. Demirkaya, Ö. Ö. Özcan, M. Karahan

Biotechnologia Acta. , 2022

International DOI: http://doi.org/10.15407/biotech15.02.013

**Effect of Nutritional Supports on Malnutrition, Cognition, Function and Biomarkers of Alzheimer's Disease: A Systemic Review**

Rümeysa Rabia Kocatürk, Arzu Temizyürek, Öznur Özge Özcan, Türker Tekin Ergüzel, Mesut Karahan, Nevzat Tarhan

Basic and Clinical Neuroscience, 2022

International DOI: 10.32598/bcn.2022.3665.1

**Quetiapine Improves Sensorimotor Gating Deficit in A Sleep Deprivation-Induced Rat Model**

Öznur Özge Özcan, Burcu Çevreli, Arzu Temizyürek, Mesut Karahan

Sleep and Biological Rhythms, 2023

International DOI: 10.1007/s41105-023-00504-x

**Therapeutic and prophylactic effects of fulvic acid on a breast cancer model established by MCF-7 Cell line in SCID mice**

Osman Bilgin, Duygu Oran, Arzu Temizyürek, Atilla Çelik, Ertan Yavuz

European Journal of Cancer Care, 2024

International DOI: https://doi.org/10.1155/2024/5871444

**Effects of waiting time between trials and water temperature on cognitive functions, body temperature and body weight in rats in Morris water maze**

Duygu Sultan Oran, Zeynep Yıldız, Arzu Temizyürek, Ayşin Selcan

Journal of Istanbul Veterinary Sciences. , 2022

National DOI: https://doi.org/10.30704/http-www-jivs-net.1115170

## PROCEEDINGS

### **Blood brain barrier dynamics & anti-epileptogenic effects of antiepileptic drug-bound nanoparticle in WAG/Rij rats as a genetic absence epilepsy model**

Temizyurek A., Canan Ugur Yilmaz, Serkan Emik, Nurcan Orhan, Muge Atis, Ugur Akcan, Nadir Arican, Bulent Ahishali, Mehmet Kaya

22nd International Symposium "Signal Transduction at the Blood-Brain Barriers", Würzburgs Germany/ Book of abstracts,

International

### **Blood-brain barrier dynamics of nanotechnological drug carriers in animal model of temporal lobe epilepsy**

Canan Ugur Yilmaz, Nurcan Orhan, Arzu Temizyurek, Muge Atis, Ugur Akcan, Rouhollah Khodadust, Nadir Arican, Mutlu Kucuk, Candan Gurses, Bulent Ahishali, Serkan Emik, Mehmet Kaya

Fluids Barriers CNS . 2017 Oct 27;14(Suppl 2):27. doi: 10.1186/s12987-017-0071-4,

International

### **IgG-conjugated gold nanoparticles restore blood-brain barrier damage in both in vitro and in vivo models of sepsis (Poster Presentation)**

Esen F., Akcan U., Çavuşlar Ö., Orhun G., Ergin Ozcan P., Yağcı Acar H., Temizyürek A., Bakbak H., Altunsu D., Ayvaz E., Ahishali B., Kaya M.

23rd International Symposium "Signal Transduction at the Blood-Brain Barriers, Italy/ Book of abstracts,

International

### **The role of calpain inhibitor-I in NF-κB pathway in an in vitro blood-brain barrier model under inflammatory conditions**

Akbulak İ., Temizyürek A., Altunsu D., Ayvaz E., Ahishali B., Kaya M.

23rd International Symposium "Signal Transduction at the Blood-Brain Barriers", Italy / Book of abstracts,

International

### **The effectiveness of antagonists of four histamine receptor types and inhibitor of RhoA in reversing in histamine-induced transient blood-brain barrier opening**

Akcan U., Temizyurek A., Özen D., Şeker Polat F., Uğur Yılmaz C., Demirci G., Akbulak İ., Üzbe A.S., Üzbe P.P., Yağcı Acar F., Kaya M., Ahishali

23rd International Symposium "Signal Transduction at the Blood-Brain Barriers", Italy ,

International

### **Nanoparticles as novel drug carrier systems in in-vivo blood brain barrier and cancer (xenograft) research / BUSHK**

Arzu Temizyurek ( Keynote speaker)

5th BUSHK International Conference "Contemporary Trends in Quality Healthcare", 1-11 June, 2023, Pakistan / Book of abstracts,

International

### **The effect on FABP7 on BBB integrity in LPS-induced inflammation**

Deniz Altunsu Kurt, Arzu Temizyürek, Ecem Ayvaz, Mehmet Kaya, Paulo Lizano, Bülent Ahishali

2024 Harvard Psychiatry Research Day , Boston, MA, USA / Book of abstracts,

International

### **Biodistribution Pharmacokinetics and Toxicology Study of Highly Biocompatible and Biodegradable Ag2S Near-Infrared Quantum Dots in Mice**

A. Savalan, A. Temizyürek, E. Malekifard, T. M. Okyay, H. Turan, H. S. Moğul, B. Yılmaz, E. Brahimi, M. Kaya

2nd International Conference on Nanomaterials, Nanofabrication and Nanocharacterization, Turkey/ Book of abstracts,

National

### **Blood brain barrier dynamics and antiepileptogenic effects of antiepileptic drug-induced nanoparticle in WAG/Rij rats as a genetic absence epilepsy model epilepsy (Oral Presentation)**

Arzu Temizyürek, Canan Ugur Yilmaz, Serkan Emik, Nurcan Orhan, Muge Atis, Ugur Akcan, Nadir Arican, Bulent Ahishali, Mehmet Kaya

Turkish Physiological Sciences Association 45th National Physiology Congress, Kuşadası, Turkey/ Book of abstracts,

National

## PROCEEDINGS

### Blood-brain barrier dynamics of nanotechnological drug carriers in animal model of temporal lobe epilepsy

Canan Uğur Yılmaz, Nurcan Orhan, Arzu Temizyürek, Müge Atış, Uğur Akcan, Rouhollah Khodadust, Nadir Arıcan, Mutlu Küçük, Candan Gürses, Bülent Ahışalı, Serkan Emik, Mehmet Kaya

43rd National Physiology Congress, Turkey/ Book of abstracts,

National

## PROJECTS

### Experimental Intervention on ischemic stroke outcome (Researcher)

Other (International), 20.05.2025 -

International Continues

### The Effect of Single and Multiple Optogenetic Spreading Depolarization induced Microglial, Pericyte and Astrocyte Response to Blood-Brain Barrier Dynamics in Common Pathways of Epilepsy and Migraine (Manager)

Other (International), 21.02.2025 -

International Continues

### Design and Development of an Efficient Therapeutic Strategy using anti-ageing siRNAs cocktails-enriched embryonic stem cell derived exosomes for rejuvenating senescent skin cells: Possible Pushing Back the Boundaries of Skin Aging (Researcher)

Tübitak 1001, 27.01.2025 -

National Continues

### Evaluation of the Antineoplastic Activity of Low Molecular Weight Heparin on the Growth and Metastasis of Oral Squamous Cell Carcinoma Cells in a Xenograft Mouse Model (Researcher)

Tübitak 1001, 27.12.2024 -

National Continues

### Parkinson Hastalığının Tedavisinde Potansiyel İlaç Etken Maddesi Olan Koridin Alkaloidinin Biyoteknolojik Olarak Üretimi, Saflaştırılması, Sitotoksik ve Nörokoruyucu Aktivitesinin Belirlenmesi (Researcher)

Tübitak 1001, 27.12.2024 -

National Continues

### Biodegradable, Near-Infrared emitting dendronized quantum dots for glucose mediated delivery of Combination Therapy to Brain Tumors (Researcher)

Other (National), 27.01.2024 -

National Continues

### In Vivo Evaluation of Blood Brain Barrier Crossing of Water -Soluble Silicon Phthalocyanines on Malignant Glioma Cell Lines (ongoing project supported by BAP Istanbul University (Researcher)

Other (National), 27.01.2024 -

National Completed

### Investigation of the Effect of STING Agonist Encapsulated with Cationic Polymer Nanoparticles on T Cell Mediated Anti-Tumor Immune Response in Cancer Immunotherapy (Researcher)

Tübitak 3501, 27.12.2023 -

National Continues

### The relationship between unpredictable stress and the blood-brain barrier (Manager)

BAP, 22.03.2023 -

National Continues

### In vivo Investigation of the Therapeutic Efficacy of an Exosome-Based Nanocarrier System Originating from Wharton Gel Stem Cells TUSEB B (Researcher)

Other, 27.01.2023 -

National Continues

### Polymeric Nanoparticle Based Smart Drug System for the Treatment of Cancer Tissues (Researcher)

Other (National), 27.01.2023 -

National Completed

## PROJECTS

**In vitro and In Vivo Investigation of the Roles of BRPF Epigenetic Regulators in Reversing Taxane Resistance in Castration-Resistant Prostate Cancer (Researcher)**

Tübitak 3501, 27.01.2022 -

National Completed

**The role of calpain inhibitor-I in NF- $\kappa$ B pathway in an in vitro blood-brain barrier model under inflammatory conditions (Researcher)**

Other (National), 27.01.2021 -

National Completed

**Effect of resolvin D1 on blood-brain barrier integrity in angiotensin II-induced chronic hypertensive model (Researcher)**

Other (National), 27.01.2021 -

National Continues

**Roles of transforming growth factor beta receptor I and dynamin on blood-brain barrier integrity in hypertensive mice (Researcher)**

Other (National), 27.01.2020 -

National Completed

**Effect of resolvin D1 on blood-brain barrier integrity in angiotensin II-induced chronic hypertensive model (Researcher)**

Other (National), 27.01.2020 -

National Completed

**The effect on FABP7 on BBB integrity in LPS-induced inflammation (Researcher)**

Other (National), 27.01.2020 -

National Completed

**Development of tumor targeting theranostic nanoparticles for combination therapy and their in vitro and in vivo tests (Researcher)**

Tübitak 1001, 27.01.2019 -

National Completed

**Biological Drug Design with Blood-Brain Barrier Carrier for Temporal Lobe Epilepsy Treatment (Researcher)**

Other (International), 27.01.2019 -

International Completed

**Development of Mesenchymal Stem Cells, Nanoparticles and MicroRNA Mediated Combined Treatment Method in an Osteoarthritis Model (Researcher)**

Other (National), 27.01.2018 -

National Completed

**The effects of the methyl-beta-cyclodextrin and myriocin on blood-brain barrier integrity in septic rats (Researcher)**

Other (National), 27.01.2018 -

National Completed

**Blood brain barrier dynamics and antiepileptogenic effects of antiepileptic drug- bound nanoparticle in WAG/Rij rats as a genetic absence epilepsy mode (Researcher)**

BAP, 27.01.2018 -

National Completed

**The investigation of the therapeutic and prophylaxis effect of fulvic acid in MCF-7 cell line induced breast cancer models (Researcher)**

Other (National), 27.12.2017 -

National Completed

**Investigation of proteins that interact with FGF1 in the peripheral nervous system (Expert)**

BAP, 27.03.2017 -

National Completed

## PROJECTS

**Treatment of the drug-bound nanoparticles in animal models of temporal lobe epilepsy and dynamics of the blood-brain barrier (Researcher)**

BAP, 27.01.2017 -

National **Completed**

## THESIS SUPERVISION

## COURSES

Course Type	Course Code	Course Name
Bachelor's Degree	MED 100 - Committee	Molecular & Cellular Medical Sciences/ Physiology
Bachelor's Degree	MED 200- Committee	Physiology of the Nervous System
Bachelor's Degree	MED 200- Committee	Physiology of the Reproductive System
Bachelor's Degree	MED 200- Committee	Physiology of the Urinary Tract System
Bachelor's Degree	MED 100 - Committee	Physiology of the Musculoskeletal System
Bachelor's Degree	MED 200- Committee	Physiology of the Digestive System
Master's Degree	BMSE	PHYSIOLOGY
Bachelor's Degree	SRCP	Social Responsibility and Career Plan
Bachelor's Degree	MED -II	Medical Skills

## PERSONAL INFORMATION

### CONTACT INFORMATION

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