

## **Assoc. Prof. RAFİG GURBANOV**

### **Personal Information**

**Office Phone:** [+90 228 214 1425](tel:+902282141425)

**Email:** rafig.gurbanov@bilecik.edu.tr

**Web:** <https://avesis.bilecik.edu.tr/rafig.gurbanov>

**Address:** Bilecik Şeyh Edebalı Üniversitesi, Merkezi Araştırma Laboratuvarı Uygulama ve Araştırma Merkezi (BARUM), 11230  
Gülümbe Kampüsü / Bilecik, Türkiye

### **International Researcher IDs**

ScholarID: NOn0BPAAAAAJ

ORCID: 0000-0002-5293-6447

Publons / Web Of Science ResearcherID: AFH-3654-2022

ScopusID: 36866012100

Yoksis Researcher ID: 338577

### **Education Information**

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biyokimya (Dr), Turkey  
2010 - 2016

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biyokimya (YI) (Tezli),  
Turkey 2005 - 2010

Undergraduate, Hazar Üniversitesi, TIP, Tibbi Biyoloji, Azerbaijan 2000 - 2005

### **Foreign Languages**

English, C2 Mastery

### **Dissertations**

Doctorate, Characterization of heavy metal resistant bacteria using infrared spectroscopy together with chemical pattern  
recognition techniques, Middle East Technical University, Fen Bilimleri Enstitüsü, Biyokimya (Dr), 2016

Postgraduate, The effects of selenium on STZ-induced diabetic rat kidney plasma membrane, Middle East Technical  
University, Fen Bilimleri Enstitüsü, Biyokimya (YI) (Tezli), 2010

### **Research Areas**

Biochemistry

### **Courses**

#### **Doctorate**

Memeli Metabolizmasının Hormonal Regülasyonu ve Entegrasyonu, Doctorate, 2025 - 2026

Glikobiyoloji, Doctorate, 2023 - 2024

Protein Biyokimyası, Doctorate, 2018 - 2019

#### **Postgraduate**

Metabolizma, Postgraduate, 2025 - 2026

Biyomedikal Araştırmalarda Makine Öğrenimine Giriş, Postgraduate, 2023 - 2024

Mikrobiyal Metabolizma, Postgraduate, 2023 - 2024

Uzman Alan, Postgraduate, 2020 - 2021

Tez çalışması, Postgraduate, 2020 - 2021

Yüksek Lisans Tez Çalışması, Postgraduate, 2019 - 2020

Canlıların Moleküler Yapıları, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018

Uzmanlık Alan Dersi, Postgraduate, 2019 - 2020

Virüslerin Moleküler Biyolojisi, Postgraduate, 2018 - 2019, 2017 - 2018

#### **Undergraduate**

Temel Ölçme Teknikleri Laboratuvarı, Undergraduate, 2023 - 2024

Biyoenstrümantasyon, Undergraduate, 2023 - 2024

Biyoproses Mühendisliği, Undergraduate, 2023 - 2024

Biyomühendislik Laboratuvarı, Undergraduate, 2023 - 2024

Biyomedikal Elektroniki, Undergraduate, 2023 - 2024

Biyokimya I, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Moleküler Byolojide Uygulamalar I, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

Moleküler Byolojide Uygulamalar II, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018

Biyokimya II, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017

Ders Dışı Etkinlik, Undergraduate, 2019 - 2020

Biyoteknoloji, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017

Moleküler Teknoloji, Undergraduate, 2019 - 2020

Enzimoloji, Undergraduate, 2018 - 2019, 2017 - 2018

Tıbbi Mikrobiyoloji, Undergraduate, 2018 - 2019

Moleküler Teknikler, Undergraduate, 2018 - 2019

Histoloji, Undergraduate, 2017 - 2018

Model Organizmalar, Undergraduate, 2017 - 2018, 2016 - 2017

Moleküler Terminoloji, Undergraduate, 2017 - 2018

Endüstriyel Mikrobiyoloji, Undergraduate, 2017 - 2018, 2016 - 2017

Mikrobiyoloji, Undergraduate, 2016 - 2017

Biyokimya Laboratuvarı II, Undergraduate, 2016 - 2017

Viroloji, Undergraduate, 2016 - 2017

#### **Supervised Theses**

Gurbanov R., COVID-19 Patogenezinin Moleküler Düzeyde Tanımlanması ve Tahmini İçin Spektrokimyasal ve Açıklanabilir Yapay Zekâ Yaklaşımlarının Birlikte Değerlendirilmesi, Postgraduate, G.TOKGÖZ(Student), 2025

GURBANOV R., Karsinoembriyonik antijen (CEA) Proteinin Tespiti için Yapay Zeka ve Makine Öğrenimi destekli Spektrokimyasal Tekniğin Geliştirilmesi, Doctorate, S.KARAÇAM(Student), 2023

GURBANOV R., Escherichia coli'de klorheksidin ve azitromisin sinerjistik etkisinin biyomoleküler düzeyde kapsamlı incelenmesi, Postgraduate, G.SAMGANE(Student), 2023

GURBANOV R., Antimicrobial and anti-biofilm activities of lipids extracted from Schizophyllum sp. S31 microalgae, Postgraduate, D.ABDULLAH(Student), 2022

GURBANOV R., Ticari marka tavuk etlerinin protein kalite farklılıklarının hızlı tespitine yönelik örüntü tanıma algoritmaları temelli parmak izi yöntem tasarımı, Postgraduate, B.KALKANCI(Student), 2022

GURBANOV R., Tapyoka nişastası fermantasyonu ile probiyotik bakteriyel metabolitlerin üretimi ve karakterizasyonu, Postgraduate, H.KARADAĞ(Student), 2021

GURBANOV R., Streptococcus salivarius M18 hücrelerde süpernatantinin, patojen bakterilerde anti-bakteriyel ve kolon

kanseri hücrelerinde anti-kanser etkilerinin araştırılması, Postgraduate, S.KARAÇAM(Student), 2021

GURBANOV R., Habitat farklılıklarının *rattus rattus* bağırsak mikrobiyotası üzerine etkilerinin moleküller tanımlama teknikleri ile analizi (Rodentia: Muridae), Postgraduate, U.KABAOĞLU(Student), 2020

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Decoding myasthenia gravis: advanced diagnosis with infrared spectroscopy and machine learning**  
Severcan F., Ozyurt I., Dogan A., Severcan M., GURBANOV R., Kucukcankurt F., Elibol B., Tiftikcioglu I., Gursoy E., Yangin M. N., et al.  
Scientific Reports, vol.14, no.1, 2024 (SCI-Expanded)
- II. **Spectrochemical and explainable artificial intelligence approaches for molecular level identification of the status of critically ill patients with COVID-19**  
Tokgoz G., KIRBOĞA K. K., ÖZEL F., YÜCEPUR S., ARDAHANLI İ., GURBANOV R.  
Talanta, vol.279, 2024 (SCI-Expanded)
- III. **Promoting longevity in aged liver through NLRP3 inflammasome inhibition using taurooursodeoxycholic acid (TUDCA) and SCD probiotics**  
Baba B., Ceylani T., GURBANOV R., Açıkgöz E., Keskin S., Allahverdi H., Samgane G., Tombuloglu H., Teker H. T.  
Archives of Gerontology and Geriatrics, vol.125, 2024 (SCI-Expanded)
- IV. **Understanding the transition to viable but non-culturable state in *Escherichia coli* W3110: a comprehensive analysis of potential spectrochemical biomarkers**  
İzgördü Ö., GURBANOV R., DARCAN C.  
World Journal of Microbiology and Biotechnology, vol.40, no.7, 2024 (SCI-Expanded)
- V. **Modulation of bacterial membranes and cellular macromolecules by dimethyl sulfoxide: A dose-dependent study providing novel insights**  
Tunçer Çağlayan S., Gurbanov R.  
International Journal of Biological Macromolecules, vol.267, 2024 (SCI-Expanded)
- VI. **Supplementing probiotics during intermittent fasting proves more effective in restoring ileum and colon tissues in aged rats**  
Teker H. T., Ceylani T., Keskin S., Samgane G., Allahverdi H., Açıkgöz E., GURBANOV R.  
Journal of Cellular and Molecular Medicine, vol.28, no.6, 2024 (SCI-Expanded)
- VII. **Exploring the biotechnological prospects of a recently discovered fungus isolated from marine mucilage**  
Bayazit G., GÜL Ü. D., ERTİT TAŞTAN B., TOZOĞLU F., GURBANOV R.  
Biomass Conversion and Biorefinery, 2024 (SCI-Expanded)
- VIII. **Reduced liver damage and fibrosis with combined SCD Probiotics and intermittent fasting in aged rat**  
Teker H. T., Ceylani T., Keskin S., Samgane G., Baba B., Açıkgöz E., GURBANOV R.  
Journal of Cellular and Molecular Medicine, vol.28, no.1, 2024 (SCI-Expanded)
- IX. **Marine Microalgae *Schizochytrium* sp. S31: Potential Source for New Antimicrobial and Antibiofilm Agent**  
Hammadi Al-Ogaidi D. A., Karaçam S., Gurbanov R., Vardar-Yel N.  
Current Pharmaceutical Biotechnology, vol.25, no.11, pp.1478-1488, 2024 (SCI-Expanded)
- X. **Synthesis and Photophysical Characterizations of Benzimidazole Functionalized BODIPY Dyes**  
Sevinç G., Doğan E., Mansuroğlu S., Gurbanov R.  
Journal of Fluorescence, 2024 (SCI-Expanded)
- XI. **The rejuvenating influence of young plasma on aged intestine**  
Ceylani T., Teker H. T., Keskin S., Samgane G., Açıkgöz E., GURBANOV R.  
Journal of Cellular and Molecular Medicine, vol.27, no.18, pp.2804-2816, 2023 (SCI-Expanded)
- XII. **Evaluation of copper-induced biomolecular changes in different porin mutants of *Escherichia coli* W3110 by infrared spectroscopy**  
Kilicaslan G., GURBANOV R., DARCAN C.

- Journal of Biological Physics, vol.49, no.3, pp.309-327, 2023 (SCI-Expanded)
- XIII. **Age-related differences in response to plasma exchange in male rat liver tissues: insights from histopathological and machine-learning assisted spectrochemical analyses**  
Teker H. T., Ceylani T., Keskin S., Samgane G., Mansuroglu S., Baba B., Allahverdi H., Açıkgöz E., GURBANOV R.  
Biogerontology, vol.24, no.4, pp.563-580, 2023 (SCI-Expanded)
- XIV. **Dose-dependent Plant-promoting Effect of Macroalgae *Stylophodium schimperi* Extracts in *Solanum lycopersicum* and Detection of Phloroglucinol Composition**  
ÜNAL D., GURBANOV R., Sevim G., Samgane G., Varış G., ÖZDEMİR KOÇAK F., Tuney-Kızılıkaya I.  
Journal of Soil Science and Plant Nutrition, vol.23, no.2, pp.2018-2029, 2023 (SCI-Expanded)
- XV. **The importance of habitat in the tumor-associated Pten, Mtor, and Akt gene expressions and chromosomal aberrations for wild rats**  
YAĞCI T., Kabaoğlu U., GURBANOV R.  
Biologia, vol.78, no.3, pp.779-789, 2023 (SCI-Expanded)
- XVI. **Effect of Micromonospora sp. KSC08 on nitrogen conservation throughout composting**  
Kumas A., Ertekin S. G., GURBANOV R., ŞİMŞEK Y. E., Kocak F., DEĞİRMENÇİ L.  
Biomass Conversion and Biorefinery, vol.13, no.3, pp.2375-2390, 2023 (SCI-Expanded)
- XVII. **Non-growth inhibitory doses of dimethyl sulfoxide alter gene expression and epigenetic pattern of bacteria**  
TUNÇER S., GURBANOV R.  
Applied Microbiology and Biotechnology, vol.107, no.1, pp.299-312, 2023 (SCI-Expanded)
- XVIII. **Intermittent fasting-induced biomolecular modifications in rat tissues detected by ATR-FTIR spectroscopy and machine learning algorithms**  
Ceylani T., Teker H. T., Samgane G., GURBANOV R.  
Analytical Biochemistry, vol.654, 2022 (SCI-Expanded)
- XIX. **Infrared spectrochemical findings on intermittent fasting-associated gross molecular modifications in rat myocardium**  
ARDAHANLI İ., ÖZKAN H. İ., ÖZEL F., GURBANOV R., Teker H. T., Ceylani T.  
Biophysical Chemistry, vol.289, 2022 (SCI-Expanded)
- XX. **Rapid diagnosis of malignant pleural mesothelioma and its discrimination from lung cancer and benign exudative effusions using blood serum**  
Yonar D., Severcan M., GURBANOV R., Sandal A., Yilmaz U., Emri S., Severcan F.  
Biochimica et Biophysica Acta - Molecular Basis of Disease, vol.1868, no.10, 2022 (SCI-Expanded)
- XXI. **Tapioca starch and skim milk support probiotic efficacy of *Lactiplantibacillus plantarum* post-fermentation medium against pathogens and cancer cells**  
Karadağ H., TUNÇER S., Karaçam S., GURBANOV R.  
Archives of Microbiology, vol.204, no.6, 2022 (SCI-Expanded)
- XXII. **Metagenomic analysis of intestinal microbiota in wild rats living in urban and rural habitats**  
GURBANOV R., Kabaoğlu U., YAĞCI T.  
Folia Microbiologica, vol.67, no.3, pp.469-477, 2022 (SCI-Expanded)
- XXIII. **Myocardial performance index increases at long-term follow-up in patients with mild to moderate COVID-19**  
ARDAHANLI İ., Akhan O., Sahin E., Akgun O., GURBANOV R.  
Echocardiography, vol.39, no.4, pp.620-625, 2022 (SCI-Expanded)
- XXIV. **Pb intoxicated biomolecular changes in *Cladonia convoluta* studied using 2DCOS infrared spectroscopy coupled with chemometric analysis**  
Karthikeyan S., GURBANOV R., ÜNAL D.  
Vibrational Spectroscopy, vol.119, 2022 (SCI-Expanded)
- XXV. **Evaluation of ventricular repolarization parameters in erectile dysfunction: a predictor of cardiac diseases**  
ARDAHANLI İ., Yılmaz A. H., Akgün O., GURBANOV R.  
Journal of Men's Health, vol.18, no.3, 2022 (SCI-Expanded)

- XXVI. Optimization the removal of lead ions by fungi: Explanation of the mycosorption mechanism  
HASDEMİR Z. M., GÜL Ü. D., GURBANOV R., ŞİMŞEK S.  
Journal of Environmental Chemical Engineering, vol.9, no.2, 2021 (SCI-Expanded)
- XXVII. Tapioca Starch Modulates Cellular Events in Oral Probiotic *Streptococcus salivarius* Strains  
GURBANOV R., Karadağ H., Karaçam S., Samgane G.  
Probiotics and Antimicrobial Proteins, vol.13, no.1, pp.195-207, 2021 (SCI-Expanded)
- XXVIII. CoronaVac (Sinovac) COVID-19 vaccine-induced molecular changes in healthy human serum by infrared spectroscopy coupled with chemometrics  
Dogan A., GURBANOV R., Severcan M., Severcan F.  
Turkish Journal of Biology, vol.45, no.Special Issue 1, pp.549-558, 2021 (SCI-Expanded)
- XXIX. A novel approach for the discrimination of culture medium from Vascular Endothelial Growth Factor (VEGF) overexpressing colorectal cancer cells  
TUNÇER S., GURBANOV R.  
Turkish Journal of Biochemistry, vol.45, no.6, pp.715-724, 2020 (SCI-Expanded)
- XXX. The impact of the different habitats on skull variation in the fossorial subterranean rodents (Rodentia: Spalacidae) from Middle Anatolia  
YAĞCI T., GURBANOV R.  
Ecological Research, vol.34, no.6, pp.802-812, 2019 (SCI-Expanded)
- XXXI. Methylation, sugar puckering and Z-form status of DNA from a heavy metal-acclimated freshwater *Gordonia* sp.  
GURBANOV R., TUNÇER S., Mingu S., Severcan F., GÖZEN A. G.  
Journal of Photochemistry and Photobiology B: Biology, vol.198, 2019 (SCI-Expanded)
- XXXII. Comparison of microbially induced calcium carbonate precipitation eligibility using *sporosarcina pasteurii* and *bacillus licheniformis* on two different sands  
Saricicek Y. E., GURBANOV R., PEKCAN O., GÖZEN A. G.  
Geomicrobiology Journal, vol.36, no.1, pp.42-52, 2019 (SCI-Expanded)
- XXXIII. Low dose dimethyl sulfoxide driven gross molecular changes have the potential to interfere with various cellular processes  
TUNÇER S., GURBANOV R., Sheraj I., Solel E., ESENTÜRK O., BANERJEE S.  
Scientific Reports, vol.8, no.1, 2018 (SCI-Expanded)
- XXXIV. The biomolecular alterations in *cladonia convoluta* in response to lead exposure  
GURBANOV R., ÜNAL D.  
Spectroscopy Letters, vol.51, no.10, pp.563-570, 2018 (SCI-Expanded)
- XXXV. Synthesis and structural characterization of geminal and non-geminal 1,1,3,3-tetramethylguanidine substituted derivatives of cyclotriphosphazene: Thermal and spectroscopic investigations of the products  
TÜRE S., GURBANOV R.  
Phosphorus, Sulfur and Silicon and the Related Elements, vol.193, no.10, pp.620-629, 2018 (SCI-Expanded)
- XXXVI. Reactions of cyclochlorotriphosphazatriene with 2-mercaptoethanol. Calorimetric and spectroscopic investigations of the derived products  
TÜRE S., GURBANOV R., Tuna M.  
Phosphorus, Sulfur and Silicon and the Related Elements, vol.193, no.9, pp.600-610, 2018 (SCI-Expanded)
- XXXVII. Aspects of silver tolerance in bacteria: infrared spectral changes and epigenetic clues  
GURBANOV R., S. Ozek N., TUNÇER S., Severcan F., GÖZEN A. G.  
Journal of Biophotonics, vol.11, no.5, 2018 (SCI-Expanded)
- XXXVIII. Rapid classification of heavy metal-exposed freshwater bacteria by infrared spectroscopy coupled with chemometrics using supervised method  
GURBANOV R., GÖZEN A. G., Severcan F.  
Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, vol.189, pp.282-290, 2018 (SCI-Expanded)
- XXXIX. Using ISSR markers in determination of genetic relationship between  $2n = 54$  and  $2n = 60$  cytotypes

**of Nannospalax xanthodon (Nordmann, 1840) (Mammalia, Rodentia) from Central Anatolia**  
**Использование ISSR маркеров в определении генетической связи между  $2n = 54$  и  $2n = 60$**   
**цитотипами Nannospalax xanthodon (Nordmann, 1840) (Mammalia, Rodentia) из Центральной**  
**Анатолии**

YAĞCI T., Şen E., GURBANOV R.

Russian Journal of Theriology, vol.17, no.2, pp.100-107, 2018 (SCI-Expanded)

- XL. **Restoring effect of selenium on the molecular content, structure and fluidity of diabetic rat kidney brush border cell membrane**

GURBANOV R., Bilgin M., Severcan F.

Biochimica et Biophysica Acta - Biomembranes, vol.1858, no.4, pp.845-854, 2016 (SCI-Expanded)

- XLI. **Quick Discrimination of Heavy Metal Resistant Bacterial Populations Using Infrared Spectroscopy Coupled with Chemometrics**

GURBANOV R., Simsek Ozek N., GÖZEN A. G., Severcan F.

Analytical Chemistry, vol.87, no.19, pp.9653-9661, 2015 (SCI-Expanded)

- XLII. **FT-IR spectroscopy in diagnosis of diabetes in rat animal model**

Severcan F., Bozkurt O., GURBANOV R., Gorgulu G.

Journal of Biophotonics, vol.3, no.8-9, pp.621-631, 2010 (SCI-Expanded)

## Articles Published in Other Journals

- I. **From Mass Spectrometry to Glycan Microarrays: An Overview of Analytical Techniques in Glycomics**  
TEKİN B., GURBANOV R.

Bilecik Şeyh Edebali Üniversitesi Fen Bilimleri Dergisi, 2024 (Peer-Reviewed Journal)

- II. **Yeşil Sentez Yöntemi İle Althaea officinalis Bitkisi Kullanılarak Elde Edilen Nanokompozitlerin Karakterizasyonu ve Hemolitik Aktivitelerinin Değerlendirilmesi**  
Şensoy Gün B., Tunali B., Gurbanov R.

JOURNAL OF GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES OF MEHMET AKIF ERSOY UNIVERSITY, vol.2024, pp.1-15, 2024 (Peer-Reviewed Journal)

- III. **Alphafold: Derin Öğrenme ve Sinir Ağları Yoluyla Protein Katlamasında Devrim Yaratmak**  
TEKİN B., GURBANOV R.

İstanbul Ticaret Üniversitesi Fen Bilimleri Dergisi, vol.22, no.44, pp.445-466, 2023 (Peer-Reviewed Journal)

- IV. **Assessment of left ventricular functions with myocardial performance index in coronary slow flow phenomenon**

ARDAHANLI İ., AKGÜN O., ÖZMEN M., GURBANOV R., MIHALJEVIC O.

ANNALS OF CLINICAL AND ANALYTICAL MEDICINE, vol.13, no.12, pp.1414-1418, 2022 (Peer-Reviewed Journal)

- V. **Association between the atrial septal aneurysm and frequent premature ventricular complexes**  
Ardahanlı İ., Özmen M., Akgün O., Karakurt D., Gurbanov R., Mihaljevic O.

ANNALS OF CLINICAL AND ANALYTICAL MEDICINE, vol.13, no.10, pp.1143-1147, 2022 (ESCI)

- VI. **The Use of Fourier-Transform Infrared Spectroscopy to Determine Potential Starch-based Prebiotics**  
GURBANOV R., TUNÇER S.

KSU TARIM VE DOGA DERGİSİ-KSU JOURNAL OF AGRICULTURE AND NATURE, vol.24, no.1, pp.22-30, 2021 (ESCI)

- VII. **HEAVY METAL-ASSOCIATED CHROMOSOMAL ABERRATIONS IN SUBTERRANEAN MAMMALS (RODENTIA: SPALACIDAE) FROM POLLUTED SOILS**

YAĞCI T., GURBANOV R.

Eskişehir Teknik Üniversitesi Bilim ve Teknoloji Dergisi C- yaşam Bilimleri ve Biyoteknoloji (Online), vol.9, no.2, pp.169-178, 2020 (Peer-Reviewed Journal)

- VIII. **A2M (alpha-2-macroglobulin)**

GURBANOV R., Samgane G.

Atlas of Genetics and Cytogenetics in Oncology and Haematology, vol.24, no.12, pp.457-469, 2020 (Scopus)

- IX. **HTR4 (5-hydroxytryptamine receptor 4)**

- GURBANOV R., Karadag H.  
 Atlas of Genetics and Cytogenetics in Oncology and Haematology, vol.24, no.6, pp.224-233, 2020 (Scopus)
- X. **SLC6A4 (solute carrier family 6 member 4)**  
 GURBANOV R., Kalkancı B.  
 Atlas of Genetics and Cytogenetics in Oncology and Haematology, vol.24, no.1, pp.39-50, 2020 (Scopus)
- XI. **TPH1 (tryptophan hydroxylase 1)**  
 GURBANOV R., Karaçam S.  
 Atlas of Genetics and Cytogenetics in Oncology and Haematology, vol.24, no.11, pp.414-423, 2020 (Scopus)
- XII. **Molecular Aspects of Autism Spectrum Disorder: The Findings on the Immune System and Microbiome**  
 GURBANOV R.  
 ARSIV KAYNAK TARAMA DERGİSİ, vol.29, 2020 (Peer-Reviewed Journal)
- XIII. **NMR and DSC studies on the reactions of pentanedioxy spiro-ansacyclochlorotriphosphazene and pentanedioxy triple-bridgedcylochlorotriphosphazene with monofunctional nucleophiles**  
 GURBANOV R., TUNA M., TÜRE S.  
 SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.23, no.6, pp.1177-1189, 2019 (Peer-Reviewed Journal)
- XIV. **The effects of repeated antibiotic administration to juvenile BALB/c mice on the microbiota status and animal behavior at the adult age**  
 Ceylani T., Jakubowska-Doğru E., GURBANOV R., Teker H. T., GÖZEN A. G.  
 Heliyon, vol.4, no.6, 2018 (Scopus)
- XV. **Reactions of cyclochlorotriphosphazatriene with 1-amino-2-propanol. Calorimetric and spectroscopic investigations of the derived products**  
 TÜRE S., GURBANOV R., TUNA M.  
 SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.22, pp.1033-1047, 2018 (Peer-Reviewed Journal)
- XVI. **PNP (Purine Nucleoside Phosphorylase)**  
 GURBANOV R., TUNÇER S.  
 Atlas of Genetics and Cytogenetics in Oncology and Haematology, vol.22, no.11, pp.431-438, 2018 (Scopus)
- XVII. **MOLECULAR PROFILE OF ORAL PROBIOTIC BACTERIA TO BE USED WITH FUNCTIONAL FOODS**  
 GURBANOV R., YILDIZ F.  
 Journal of Food and Health Science, vol.3, pp.117-131, 2017 (Peer-Reviewed Journal)
- XVIII. **CFAP99 (Cilia and Flagella Associated Protein 99)**  
 Tunçer S., Gurbanov R.  
 ATLAS OF GENETICS AND CYTOGENETICS IN ONCOLOGY AND HAEMATOLOGY, no.3, 2016 (Peer-Reviewed Journal)

## Books

- I. **Phosphorus solubilizing microorganisms**  
 GURBANOV R., KALKANCİ B., KARADAĞ H., SAMGANE G.  
 in: Biofertilizers : Study and Impact, Inamuddin, Editor, Wiley-Scrivener, New York, pp.151-182, 2021
- II. **Synthetic polysaccharide-based vaccines: Progress and achievements**  
 GURBANOV R.  
 in: Polysaccharides: Properties and Applications, Inamuddin, Editor, Wiley, New York, pp.683-699, 2021
- III. **Bacterial Biofilms in Bioremediation of Metal-Contaminated Aquatic Environments**  
 GURBANOV R., SEVERCAN F.  
 in: Methods for Bioremediation of Water and Wastewater Pollution, Inamuddin, Mohd Imran Ahamed, Eric Lichtfouse, Abdullah M. Asiri, Editor, Springer Nature, Cham, pp.117-135, 2020
- IV. **Bağırsak Mikrobiyotası Ekseninde Multipl Skleroz: Probiyotiklerin Rolü**  
 GURBANOV R., UZUN C.  
 in: Güncel Temel Tıp Bilimleri Çalışmaları I, , Editor, Akademisyen Kitabevi, Ankara, pp.83-97, 2019

## Papers Published in Refereed Scientific Meetings

- I. PRODUCTION OF ANTIMICROBIAL NANOCOMPOSITE FILM CONTAINING SILVERNANOPARTICLES BY GREEN SYNTHESIS METHOD  
Şensoy Gün B., Aytıtmur A., Karagöl Ç., Gurbanov R.  
4. BİLSEL INTERNATIONAL HARPUT SCIENTIFIC RESEARCHES CONGRESS, Elazığ, Turkey, 9 - 10 November 2024
- II. A METHODOLOGICAL APPROACH FOR THE DIRECT ANALYSIS OF AIRBORNE PLASTIC PARTICLES BY PYROLYSIS-GC/MS  
Dana P. A., Şensoy Gün B., Gurbanov R., Gedik K.  
7th International Congress on Agriculture, Environment and Health, Bursa, Turkey, 30 May - 01 June 2024, pp.137
- III. Use of Olive leaf Extract as a Preservative in Commercial and Homemade Tomato Pastes  
TOZOĞLU F., Ekiz E., Tokgöz G., GURBANOV R.  
2. Uluslararası Gıda Kimyası Kongresi, Antalya, Turkey, 14 - 16 May 2023
- IV. BİLİMİN YENİ KAHRAMANI: AlphaFold TEKNOLOJİSİ ve SAĞLIK ALANINDAKİ DEVRİMİ  
TEKİN B., GURBANOV R.  
1. Ulusal Sağlık Hizmetleri ve Bilimleri Kongresi, İstanbul, Turkey, 12 May 2023
- V. TIPTA YAPAY ZEKA DEVRİMİ: ZORLUKLAR VE FIRSATLAR  
GURBANOV R.  
1. Ulusal Sağlık Hizmetleri ve Bilimleri Kongresi, İstanbul, Turkey, 11 May 2023
- VI. Investigation of the Synergistic Effects of Treatment with Chlorhexidine and zithromycin on Escherichia coli by Infrared Spectroscopy  
Samgane G., TUNÇER S., GURBANOV R.  
4 th International 33rd National Turkish Biophysics Congress, Turkey, 31 August - 03 September 2022
- VII. Applications of Microbially Induced Calcium Carbonate Precipitation on Non-Woven Geotextiles  
DUMAN E., SARIÇİEK Y. E., PEKCAN O., GURBANOV R., GÖZEN A. G.  
IOP Conference Series: Materials Science and Engineering, Volume 1260, 7th EuroGeo Conference Warsaw, Poland, Varşova, Poland, 03 September 2022, vol.1260
- VIII. Determination of the levels of peripheral CD4+ and CD8+ T cells in Turkish myasthenia gravis patients  
TUNÇER S., ÇETİN A. S., GÜNGÖRDÜ DALAR Z., GÜRSOY A. E., TİFTİKÇİOĞLU B. İ., GURBANOV R., SEVERCAN F.  
4th International 33rd National Biophysics Congress, Adiyaman, Turkey, 31 August 2022
- IX. The role of pyridostigmine (mestinon®) treatment in myasthenia gravis disease: an infrared spectroscopic study by using human serum  
ÇELİK C., KÜÇÜKCANKURT F., DOĞAN A., GURBANOV R., GÜRSOY A. E., TİFTİKÇİOĞLU B. İ., SEVERCAN F.  
4th International 33rd National Biophysics Congress, Adiyaman, Turkey, 31 August 2022
- X. Investigation of the Synergistic Effects of Treatment with Chlorhexidine and Azithromycin on Escherichia coli by Infrared Spectroscopy  
Samgane G., TUNÇER S., GURBANOV R.  
4th International 33rd National Biophysics Congress, Adiyaman, Turkey, 31 August 2022
- XI. Miyastenia Gravis Tanısı için Kıızılötesi Spektroskopisi ile Biyobelirteç Belirlenmesi  
DOĞAN MOLLAOĞLU A., GURBANOV R., KÜÇÜKCANKURT F., TİFTİKÇİOĞLU B. İ., GÜRSOY A. E., SEVERCAN F.  
32. Ulusal Biyofizik Kongresi, ONLINE, Turkey, 17 - 19 November 2021, pp.23
- XII. Questioning the Use of Low-Dose Dimethyl Sulfoxide in Bacteria: Modulation of the Stress Response and Outer Membrane Protein Expressions in Escherichia Coli  
GURBANOV R., TUNÇER S.  
9th INTERNATIONAL MOLECULAR BIOLOGY AND BIOTECHNOLOGY CONGRESS, Kars, Turkey, 6 - 10 December 2020, pp.74
- XIII. The Exposure to Chemically Polluted Environment Alters the Composition of Gut Microbiota in Rattus rattus (Rodentia: Muridae): Next-Generation Sequencing Study  
KABAOĞLU U., GURBANOV R., YAĞCI T.  
8th INTERNATIONAL MOLECULAR BIOLOGY and BIOTECHNOLOGY CONGRESS, Afyon, Turkey, 17 - 20 December

- 2019, pp.66
- XIV. **Ekstrem İşitme ve Görme Fonksiyonlarının Hayvan Modellerinde Karşılaştırılmalı Transkripsiyonel Analizi**  
 YAĞCI T., GURBANOV R., KABAÖGLU U.  
 Uluslararası Katılımlı 20. Biyoteknoloji Kongresi, Ankara, Turkey, 10 - 12 October 2019, pp.62
- XV. **Development Of Direct Shear And Triaxial Test Procedures On Microbially Treated Sand Specimens**  
 Tunali M., Duman E., SARIÇİÇEK Y. E., PEKCAN O., GÖZEN A. G., GURBANOV R.  
 1st Mediterranean Young Geotechnical Engineers Conference, Muğla/Bodrum, Turkey, 23 - 24 September 2019, pp.73-80
- XVI. **The Impact of Batch Culture Inulin Fermentation on Growth Dynamics, Live Cell Numbers and Protein Expression Profiles of Probiotic Lactobacillus Species**  
 GURBANOV R.  
 Eurasian Congress on Molecular Biotechnology (ECOMB2019), Trabzon, Turkey, 19 - 21 September 2019, pp.59
- XVII. **The Possible Link between Cytosine Methylation and Z-Form DNA in Heavy Metal-Acclimated Freshwater Bacterial Isolate**  
 GURBANOV R.  
 International Symposium Ecology 2018, Kastamonu, Turkey, 19 - 23 June 2018, pp.613
- XVIII. **DNA Methylation Patterns of Cadmium, Lead and Silver-Tolerant Bacteria Isolated from the Surface Mucus of Freshwater Fish**  
 GURBANOV R., TUNCER S., GÖZEN A. G., SEVERCAN F.  
 ISEEP-2017 VIII. International Symposium On Ecology And Environmental Problems, Çanakkale, Turkey, 4 - 07 October 2017
- XIX. **BOWEL-BRAIN AXIS AFFECTED BY CEFOPERAZONE AND AMPICILLIN TREATMENT IN MICE**  
 CEYLANI T., GURBANOV R., TEKER H. T., Jakubowska Doğru E., GÖZEN A. G.  
 6th International Congress of Molecular Medicine, İstanbul, Turkey, 22 - 25 May 2017

## Supported Projects

GURBANOV R., AYTİMUR A., ŞENSOY GÜN B., Project Supported by Higher Education Institutions, Acinetobacter Türleri Kullanılarak Polisakkarit Tabanlı Biyopolimer Sentezi, Optimizasyonu ve Karakterizasyonu, 2025 - Continues

GURBANOV R., KARAÇAM S., ŞENSOY GÜN B., Project Supported by Higher Education Institutions, Karsinoembriyonik antijen CEA Proteinin Belirlenmesi için Makine Öğrenimi destekli SERS-RAMAN Spektroskopisi Tekniğinin Optimizasyonu, 2024 - Continues

GURBANOV R., TUBITAK Project, Bitki gelişimini teşvik edebilecek özelliklerde yerli, uygun fiyatlı ve yüksek etkinlikli mikrobiyal gübre geliştirilmesi, 2022 - Continues

GURBANOV R., TUBITAK Project, Siyah alaca (Holstein) ırkı yeni doğan buzağılarda ishale bağlı ölümcül hastalığın tanımlamasına yönelik serum biyobelirteçlerinin taraması, 2022 - Continues

Gurbanov R., TUBITAK Project, STING: Dijital İkiz Yönelimli Derin Öğrenme ile Çocukluk Çağı Akut Lösemisi İçin İlaç Yeniden Konumlandırma Karar Destek Sistemi Geliştirilmesi, 2023 - 2026

Aptullahoğlu E., Akpinar Borazan A., Gurbanov R., İzgördü H., TUBITAK Project, Investigating Pharmacological Inhibition of mTORC2 with JR-AB2-011 in Acute Lymphoblastic Leukemia Using Preclinical Methods, 2024 - 2025

Aptullahoğlu E., Gurbanov R., TUBITAK Project, Examination of pharmacological mTORC2 inhibition in acute lymphoblastic leukemia using preclinical methods, 2024 - 2025

Şensoy Gün B., Gurbanov R., Tunali B., Project Supported by Higher Education Institutions, Yeşil sentez ile sentezlenen ZnO@YK nanokompozitinin antimikrobiyal aktivitesinin değerlendirilmesi ve ZnO@YK nanokompoziti kullanılarak hazırlanan merhemin yara iyileştirme kapasitesinin in vivo deneylerle araştırılması, 2023 - 2025

Gurbanov R., TUBITAK Project, Zeytin bitkisinin temel fonksiyonel bileşeni oleuropein molekülünün zeytin yaprığı özütlerinden kromatografi metodu ile kantitatif tayini, 2023 - 2024

Gurbanov R., TUBITAK Project, Zeytin yaprığı ekstraktından elde edilen oleuropein fenolik bilesiginin domates salçasında doğal ve biyoaktif bir koruyucu olarak değerlendirilmesi, 2023 - 2024

Gurbanov R., Project Supported by Higher Education Institutions, COVID-19 Patogenezinin Moleküler Düzeyde Tanımlanması ve Tahmini için Spektrokimyasal ve Açıklanabilir Yapay Zekâ Yaklaşımlarının Birlikte Değerlendirilmesi, 2023 - 2024

Gurbanov R., TUBITAK Project, Farklı çözüçülerle elde edilen ayva (*Cydonia oblonga*) yapraklı ekstraktlarının antimikrobiyal ve antibiyofilm aktivitelerinin karşılaştırılmalı olarak belirlenmesi, 2023 - 2024

Gurbanov R., TUBITAK Project, Türkiye'nin farklı bölgelerindeki yeşil ve siyah zeytin meyvelerinden elde edilen biyoaktif özütlerin antimikrobiyal ve antibiyofilm aktivitelerinin karşılaştırılmalı olarak belirlenmesi, 2023 - 2024

Gurbanov R., TUBITAK Project, Miyastenia Gravis Tanı ve Moleküler Karakterizasyonunda Kızılıtesi Spektroskopisinin Yeni Bir Tanısal Yöntem Olarak Değerlendirilmesi, 2022 - 2023

GURBANOV R., TUNÇER S., Project Supported by Higher Education Institutions, *Streptococcus Salivarius* Liyofilize Postbiyotik Ürünlerinin Anti-kanser ve Anti-Patojen Etkinliğinin Belirlenmesi, 2021 - 2022

GURBANOV R., TUNÇER S., Bakteride Düşük Dozlarda Uygulanan Dimetil Sülfoksit'in Genomik Sitozin Metilasyonuna Ve Transkriptoma Etkilerinin Yüksek Verimli Dizileme Aracılığı İle Araştırılması, 2020 - 2022

TUNÇER S., GURBANOV R., Project Supported by Higher Education Institutions, Ticari Marka Tavuk Etlerinin Protein Kalite Farklılıklarının Hızlı Tespitine Yönelik Örütü Tanıma Algoritmaları Temelli Parmak İzi Yöntem Tasarımı, 2019 - 2022

GURBANOV R., TUBITAK Project, Subletal Klorheksidin Konsantrasyonlarına Maruz Bırakılmış Bakteride Alternatif Sigma Faktör-38 ( $\sigma$ 38) Gen Ekspresyon Seviyelerinin Belirlenmesi, 2020 - 2021

GURBANOV R., TUBITAK Project, *Escherichia coli* Bakterisinde Klorheksidin Antibiyotik Stresine Karşı Cevap Olarak Üretilen RpoS Protein İfadecisinin Western Blot Tekniği ile Belirlenmesi, 2020 - 2021

GURBANOV R., TUBITAK Project, *Escherichia coli* bakterisinde flagella regülatörü olan sigma28 faktörünün ( $\sigma$ 28) gen ekspresyonundaki klorheksidin ilişkili değişimlerin incelenmesi, 2020 - 2021

TUNÇER S., GURBANOV R., Miyastenia Gravis Tanı ve Moleküler Karakterizasyonunda Kızılıtesi Spektroskopisinin Yeni Bir Tanısal Yöntem Olarak Değerlendirilmesi, 2020 - 2021

YAĞCI T., GURBANOV R., Project Supported by Higher Education Institutions, Rodent Türlerinde Bağırsak Mikrobiyotasının Moleküler Tanımlama Teknikleri ile Belirlenecek Hayvanlarda Ekolojik ve Tıbbi Özelliklerin Araştırılması, 2019 - 2021

YAĞCI T., GURBANOV R., Project Supported by Higher Education Institutions, Ekstrem İşitme ve Görme Fonksiyonlarının Hayvan modellerinde (Yarasa ve Köfare) Karşılaştırılmalı Transkripsiyonel Analizi, 2018 - 2020

GURBANOV R., TUBITAK Project, FONKSİYONEL GİDALARDA KULLANILMAK ÜZERE İNÜLİN FERMANTASYONUNUN LACTOBACİLLUS PLANTARUM VE LACTOBACİLLUS PARACASEİ BAKTERİLERİ ÜZERİNE ETKİLERİNİN İNCELENMESİ, 2019 - 2019

GURBANOV R., TUBITAK Project, Anaerobik Yolla Dirençli Tapyoka Nişastasını Fermente Eden Canlı Probiyotik Bakterilerin Kesikli Kültürde Optimizasyonu ve Büyüme Dinamiklerinin Belirlenmesi / Batch Culture Optimization and Determination of Growth Dynamics of Live Probiotic Bacteria Anaerobically Fermenting Resistant Tapioca Starch, 2018 - 2019

GURBANOV R., Project Supported by Higher Education Institutions, Öldürücü olmayan Dimetil Sülfoksit Konsantrasyonuna Maruz Bırakılmış Bakteride DNA Çift Sarmal Konformasyon ve Metilasyon Statüleri ile Sigma Faktör Proteini Etkileşimi, 2018 - 2019

GURBANOV R., TUBITAK Project, Klorheksidin Asetat Antibiyotiğine Dirençli Oral Probiyotik Bakteri Suşlarının Eldesi / The Production of Chlorhexidine-resistant Oral Probiotic Bacterial Strains, 2018 - 2018

GURBANOV R., Project Supported by Higher Education Institutions, Yüksek Metal Yoğunluklarına Açılmış Çevresel Bakteri İzolatlarının Nükleik Asitlerinde Oluşan Değişimlerin Kızılıtesi Spektroskopisi ve Gözetimsiz Örütü Tanıma Teknikleri ile Araştırılması, 2017 - 2017

TUBITAK Project, Sürdürülebilir ağır metal biyoiyileştirilmesinde bakterilerin seçimi ve uyumlanması için yöntem tasarımı, 2014 - 2016

## Peer Reviews in Scientific Publications

SCIENTIFIC REPORTS, SCI Journal, March 2025

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, SCI Journal, February 2025

BIOGERONTOLOGY, SCI Journal, January 2025

FEMS YEAST RESEARCH, SCI Journal, September 2024

CELLULOSE, SCI Journal, July 2024

JOURNAL OF GERONTOLOGY, SCI Journal, November 2023

ANALYST, THE, SCI Journal, November 2023

HELIYON, SCI Journal, October 2023

BIOCHIMICA ET BIOPHYSICA ACTA - MOLECULAR BASIS OF DISEASE, SCI Journal, June 2023

ARCHIVES OF GERONTOLOGY AND GERIATRICS AN INTERNATIONAL JOURNAL INTEGRATING EXPERIMENTAL,  
CLINICAL AND SOCIAL STUDIES ON AGEING, SCI Journal, March 2023

FRONTIERS IN MICROBIOLOGY, SCI Journal, February 2023

ARCHIVES OF MICROBIOLOGY, SCI Journal, July 2022

MOLECULES, SCI Journal, May 2022

SPECTROCHIMICA ACTA - PART A: MOLECULAR SPECTROSCOPY, SCI Journal, August 2019