

Asst. Prof. Işıl TULUM

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAK-2354-2021

ScopusID: 55608982400

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Education Information

Post Doctorate, Osaka City University, Faculty of Science, Department of Biology, Japan 2014 - 2014

Doctorate, Osaka City University, Faculty of Science, Department of Biology, Japan 2011 - 2014

Doctorate, Koc University, Institute Of Science, Department Of Computational Engineering (Interdisciplinary), Turkey 2010 - 2011

Postgraduate, Istanbul University, Institute of Graduate Studies In Sciences, Fen Fakültesi Bölümü, Turkey 2008 - 2010

Postgraduate, Istanbul University, Institute of Graduate Studies In Sciences, Eğitim Fakültesi Bölümü, Turkey 2006 - 2008

Undergraduate, Marmara University, Faculty Of Arts And Sciences, Biology, Turkey 2002 - 2006

Foreign Languages

Japanese, C1 Advanced

German, A2 Elementary

English, C1 Advanced

Dissertations

Doctorate, Involvement of two novel proteins in Mycoplasma mobilegliding machinery revealed by newly developed genemanipulation and fluorescent protein tagging, Osaka City University, 2014

Postgraduate, Mercimekten (*Lens culinaris Medik.*) ADP-glukoz pirofosforilaz ve nişasta dallandırma enzimleri cDNA'larının izolasyonu, Istanbul University, Institute of Graduate Studies In Sciences, 2010

Research Areas

Bioinformatics, Biotechnology, Microbiology, Molecular Biology and Genetics

Academic Titles / Tasks

Assistant Professor, Istanbul University, Faculty of Science, Department of Biology, 2022 - Continues

Assistant Professor, Tokyo University, Faculty of Science, Department of Applied Chemistry, 2018 - 2019

Assistant Professor, Osaka City University, Faculty of Science, Department of Biology, 2014 - 2018

Research Assistant, Osaka City University, Faculty of Science, Department of Biology, 2011 - 2014

Advising Theses

Tulum I, *Crocus chrysanthus* Herb. Bitkisinin rizosfer mikrobiyomundaki arkeal çeşitliliğin metagenomik analiz ile tespit edilmesi, Postgraduate, E.Beyza(Student), Continues

Tulum I, Fitoplazmaların Belirlenmesi için Yeni Nesil Dizileme (YND) Protokollerinin Karşılaştırılması, Doctorate, B.MÜLAYİM(Student), Continues

Tulum I, Çağlayan K., Turunçgillerden, Otsu Konukçu Bitkilerden ve Vektör Böceklerden İzole Edilen Spiroplasma citri İzolatlarının Kıyaslamalı Genomik Analizleri, Doctorate, B.KARA(Student), Continues

Tulum I, Moleküler Hastalık Kontrolü için Fitoplazma Eftör Proteinlerinin Belirlenmesi, Doctorate, K.DEREÇİK(Student), Continues

Tulum I, *Crocus chrysanthus* (Herb.) Herb. Bitkisinin Morfolojik Farklılıklarında Rizosfer Mikrobiyotasının Etkisinin Gen Dizilimi Analizleri ve Motilite Testleri ile İncelenmesi, Postgraduate, H.SARIKEÇE(Student), Continues

Tulum I, Fitoplazmaların kantitatif tespiti için droplet dijital PZR (DDPZR) tekniğinin geliştirilmesi, Doctorate, Y.SABRİ(Student), 2024

Tulum I, Floresan ve elektron mikroskop görüntüleme teknikleri ile *Narcissus tazetta* bitkisinde fitoplazma enfeksiyon mekanizmasının belirlenmesi, Doctorate, K.BOZTAŞ(Student), 2024

Tulum I, *Mycoplasma gliding* motor expressed in *Escherichia coli*, Postgraduate, J.FENG(Student), 2018

Tulum I, Chemotaxis induced by anaerobic conditions and gene manipulation method of *Spiroplasma eriocheiris*, Postgraduate, N.TERAHARA(Student), 2017

Tulum I, Analysis of internal structure of gliding machinery in *Mycoplasma mobile* by gene manipulation, Postgraduate, K.KIMURA(Student), 2016

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Comparative analysis of the complete chloroplast genome of endemic *Colchicum baytopiorum*** CD. BRICKELL
Morgil Gerçek H., Unlu O., Boztaş K., Tulum I., Öz G.
BRAZILIAN JOURNAL OF BOTANY, vol.47, no.3, pp.637-647, 2024 (SCI-Expanded)
- II. **Molecular Detection and Characterization of '*Candidatus* *Phytoplasma mali*' Associated With Phyllody on *Narcissus tazetta* in Türkiye**
BOZTAŞ K., Derecik K., Çağlayan K., TULUM I.
JOURNAL OF CROP HEALTH, vol.76, no.3, pp.683-691, 2024 (SCI-Expanded)
- III. **Expression analyses of soluble starch synthase and starch branching enzyme isoforms in stem and leaf tissues under different photoperiods in lentil (*Lens culinaris* Medik.)**
Gerçek Y. C., Boztaş K., Aydın C., Morgil H., Baris I., Öz G., Tulum I.
Biologia, vol.77, no.2, pp.593-607, 2022 (SCI-Expanded)
- IV. **Identification and sequence analyses of the gliding machinery proteins from *Mycoplasma mobile***
Tulum I., Kimura K., Miyata M.
SCIENTIFIC REPORTS, vol.10, no.1, 2020 (SCI-Expanded)
- V. **Tree of motility – A proposed history of motility systems in the tree of life**
Miyata M., Robinson R. C., Uyeda T. Q. P., Fukumori Y., Fukushima S., Haruta S., Homma M., Inaba K., Ito M., Kaito C., et al.
Genes to Cells, vol.25, no.1, pp.6-21, 2020 (SCI-Expanded)
- VI. **Peptidoglycan layer and disruption processes in *Bacillus subtilis* cells visualized using quick-freeze, deep-etch electron microscopy**
Tulum I., Tahara Y. O., Miyata M.

- MICROSCOPY, vol.68, no.6, pp.441-449, 2019 (SCI-Expanded)
- VII. **Detailed Analyses of Stall Force Generation in Mycoplasma mobile Gliding**
Mizutani M., Tulum I., Kinoshita Y., Nishizaka T., Miyata M.
BIOPHYSICAL JOURNAL, vol.114, no.6, pp.1411-1419, 2018 (SCI-Expanded)
- VIII. **Transformation of crustacean pathogenic bacterium Spiroplasma eriocheiris and expression of yellow fluorescent protein**
Terahara N., Tulum I., Miyata M.
BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol.487, no.3, pp.488-493, 2017 (SCI-Expanded)
- IX. **Structural Study of MPN387, an Essential Protein for Gliding Motility of a Human-Pathogenic Bacterium, Mycoplasma pneumoniae**
Kawakita Y., Kinoshita M., Furukawa Y., Tulum I., Tahara Y. O., Katayama E., Namba K., Miyata M.
JOURNAL OF BACTERIOLOGY, vol.198, no.17, pp.2352-2359, 2016 (SCI-Expanded)
- X. **Localization of P42 and F-1-ATPase alpha-Subunit Homolog of the Gliding Machinery in Mycoplasma mobile Revealed by Newly Developed Gene Manipulation and Fluorescent Protein Tagging**
Tulum I., Yabe M., Uenoyama A., Miyata M.
JOURNAL OF BACTERIOLOGY, vol.196, no.10, pp.1815-1824, 2014 (SCI-Expanded)
- XI. **Transcriptional regulation of the ADP-glucose pyrophosphorylase isoforms in the leaf and the stem under long and short photoperiod in lentil**
Seferoglu A. B., Baris I., Morgil H., Tulum I., Ozdas S., Cevahir G., Kavakli I. H.
Plant Science, vol.205-206, pp.29-37, 2013 (SCI-Expanded)

Articles Published in Other Journals

- I. **Overview of the bacterial/archaeal supermolecular assembly session at the 21st IUPAB and the 62nd Biophysics Society of Japan joint congress**
Nakane D., Tulum I.
BIOPHYSICAL REVIEWS, 2024 (ESCI)
- II. **In situ Detection and Investigation of The Ultrastructural Modifications of Phytoplasma Infection on Daffodil (Narcissus tazetta) Using a Combined Microscopy Approaches**
Derecik K., Boztaş K., Ulusoy M., Çağlayan K., Tulum I.
Agrica, no.13, pp.12-20, 2024 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Phytoplasma resistance**
TULUM I., ÇAĞLAYAN K.
in: Phytoplasma Diseases in Asian Countries: Characterization, Epidemiology, and Management, A.K. Tiwari, Kenro Oshima, Amit Yadav, Seyyed Esmaeilzadeh-Hosseini, Yupa Hanboonsong, Suman Lakhanpaul, Editor, Elsevier, Amsterdam, pp.210-223, 2023
- II. **Single Nucleotide Polymorphisms (SNPs) in Plant Genetics and Breeding**
TULUM I., MORGİL H., GERÇEK Y. C.
in: The Recent Topics in Genetic Polymorphisms., Çalışkan Mahmut, Cevahir Gül, Erol Osman, Editor, IntechOpen, pp.53-65, 2020

Refereed Congress / Symposium Publications in Proceedings

- I. **Visualization of Phytoplasma Infection in Plant Tissues**
Boztaş K., Kocabağ H. D., Derecik K., Gazel M., Çağlayan K., Tulum I.

24th Biennial Congress of the International Organization for Mycoplasma (IOM), Osaka, Japan, 16 - 20 July 2023, no.15, pp.98-99

- II. **In Silico Analysis of The Putative Phytoplasma Effector SAP55 that Mimics the Lipidation Mechanism of G Proteins**
TULUM I., Derecik K.
The 24th Congress of the International Organization for Mycoplasma (IOM), Osaka, Japan, 16 - 20 July 2023
- III. **Molecular detection of 'Candidatus Phytoplasma mali' associated with virescence in Narcissus tazetta in Turkey**
TULUM I., BOZTAŞ K., KOCABAĞ H. D., ÇAĞLAYAN K., DERECİK K.
The 5th Congress of the International Phytoplasma Working Group (IPWG), Muscat, UMMAN, 21 May 2023, vol.13, pp.113-114
- IV. **Molecular detection of phytoplasma associated disease in Türkiye.**
Ünlü Y. S., Boztaş K., Tulum I.
2nd International Molecular Plant Protection Congress- IMPPC2023, Bursa, Turkey, 15 - 18 May 2023, pp.105-106
- V. **Spreading status of 'Candidatus Phytoplasma' in tomato and grapevine plants in Western Marmara region of Turkey**
Ünlü Y. S., Boztaş K., Öz G., Tulum I.
5th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2022), Ankara, Turkey, 23 - 25 November 2022, no.1165, pp.65
- VI. **Comparative genomic analysis of Spiroplasma citri in naturally infected citrus samples and in vitro cultures in Turkey**
TULUM I., ÇAĞLAYAN K., GAZEL M., KOCABAĞ H. D.
14th International Citrus Congress (ICC 2022), Mersin, Turkey, 06 November 2022
- VII. **"Synthetic Biology and Minimal Genome Concept"**
TULUM I.
Seminars in Biotechnology BTEC 591 & BTEC 691, İzmit, Turkey, 17 December 2020
- VIII. **"Propulsion force of gliding motility of Mycoplasma mobile"**
TULUM I.
The 46th Meeting of the Japanese Society for Mycoplasma, Sapporo, Japan, 18 May 2019
- IX. **"Effect of MreB depolymerization on helicity-switching swimming motility in crustacean pathogen, Spiroplasma eriocheiris."**
TULUM I.
The 22th Congress of the International Organization for Mycoplasma (IOM), Portsmouth, Dominica, 12 July 2018
- X. **Mycoplasma mobile glides on fish gills by propulsion force of multiple legs**
TULUM I.
The 91st Annual Meeting of Japanese Society for Bacteriology, Fukuoka, Japan, 24 March 2018
- XI. **"Gene Manipulation of Mycoplasmas"**
TULUM I.
The 4th Female Researchers Award "Okamura Award" Memorial Lecture, Osaka, Japan, 16 December 2017
- XII. **"Gene Manipulation of Mycoplasmas"**
TULUM I.
Molecular Procedures in Mycoplasma Mini Symposium. The University of Tokyo, Tokyo, Japan, 09 June 2017
- XIII. **"Force generated by single unit in Mycoplasma mobile gliding."**
TULUM I.
The 21th Congress of the International Organization for Mycoplasma (IOM), Brisbane, Australia, 14 July 2016
- XIV. **"Gene Manipulation of Mycoplasmas"**
TULUM I.
The 43rd Japanese Society of Mycoplasma Meeting, Nagasaki, Japan, 03 June 2016
- XV. **"Gene Manipulation of Mycoplasmas"**
TULUM I.

Synthetic Biology Mini Symposium. Osaka University- University of Bordeaux joint symposium, Osaka, Japan, 08 January 2016

XVI. **Involvement of two novel proteins in Mycoplasma mobile gliding machinery revealed by newly developed gene manipulation and fluorescent protein tagging”**

TULUM I.

The 20th Congress of the International Organization for Mycoplasmaology (IOM), Blumenau, Brazil, 13 June 2014

Supported Projects

TULUM I., Project Supported by Higher Education Institutions, Patojen özellik taşıyan Mollicutelerin karakterizasyonu kapsamında Araştırma Laboratuvarı Altyapısı Sürekliliği Desteği, 2024 - Continues

TULUM I., DEREÇİK K., NOJİ H., TOKGÖZ K. K., TÜMAY S. O., Project Supported by Higher Education Institutions, Solunum yolu patojenlerinin tespiti için damlacık tabanlı dijital tanı kiti geliştirilmesi, 2022 - Continues

TULUM I., MÜLAYİM B., Project Supported by Higher Education Institutions, Fitoplazmaların Belirlenmesi için Yeni Nesil Dizileme (YND) Protokollerinin Karşılaştırılması, 2021 - Continues

TULUM I., DEREÇİK K., TULUM I., Project Supported by Higher Education Institutions, Moleküler Hastalık Kontrolü için Fitoplazma Eftör Proteinlerinin Belirlenmesi, 2020 - Continues

TULUM I., ÜNLÜ Y. S., TULUM I., Project Supported by Higher Education Institutions, Fitoplazmaların Kantitatif Tespiti için Droplet Dijital PZR (ddPZR) Tekniğinin Geliştirilmesi, 2020 - Continues

Tulum I., TUBITAK Project, Turunçgillerden, Otsu Konukçu Bitkilerden Ve Vektör Böceklerden İzole Edilen Spiroplasma Citri İzolatlarının Kıyaslamalı Tüm Genom Analizleri, 2024 - 2026

Erol O., Çiftçi A., Tulum I., Şık L., Tuna M., BOZTAŞ K., TUBITAK Project, A Comprehensive Study on the Systematics and Rhizosphere Biome of Crocus chrysanthus Herb. complex, 2023 - 2026

Tulum I., TUBITAK Project, Moleküler Hastalık Kontrolü İçin Fitoplazma Eftör Proteinlerinin Belirlenmesi, 2024 - 2024

Tulum I., TUBITAK Project, Fitoplazmaların Kantitatif Tespiti İçin Droplet Dijital Pzr (Ddpzr) Tekniğinin Geliştirilmesi, 2024 - 2024

TULUM I., BOZTAŞ K., Project Supported by Higher Education Institutions, Floresan ve Elektron Mikroskop Görüntüleme Teknikleri ile Narcissus tazetta Bitkisinde Fitoplazma Enfeksiyon Mekanizmasının Belirlenmesi, 2019 - 2024

Tulum I., Project Supported by Public Organizations in Other Countries, Grants-in-Aid for Scientific Research (KAKENHI)- Japan Society for Promotion of Science (JSPS)- JAPANProje no: 17H01544Proje adı: Three types of motility mechanisms in pathogenic bacteria, class Mollicutes, 2017 - 2020

Tulum I., Project Supported by Public Organizations in Other Countries, Japan Science and Technology Agency (JST)- Impulsing Paradigm Change through Disruptive Technologies Program (ImPACT)Artificial Cell Reactor Technology for an Enriched and Secure Society and New Bioengineering, 2018 - 2019

Tulum I., Industrial Organizations of Other Countries Supported Project, Kurabo Industries Co. Ltd. Institute of Technology Business Development Group- Osaka/JAPAN Proje adı: Science-Industry Collaborative Research Projects Program- Observation of bacterial cells on the surface of black silicon as antibacterial material, 2017 - 2018

Tulum I., Project Supported by Public Organizations in Other Countries, Grants-in-Aid for Scientific Research (KAKENHI)- Japan Society for Promotion of Science (JSPS)- JAPANProje no: 50209912/ Area 3407, 2012 - 2018

Memberships / Tasks in Scientific Organizations

The Biophysical Society of Japan, Member, 2011 - Continues, Japan

Japanese Society for Mycoplasmaology, Member, 2011 - Continues, Japan

Japanese Society for Bacteriology, Member, 2011 - Continues, Japan

The International Organization for Mycoplasmaology (IOM), Member, 2011 - Continues, United States Of America

Metrics

Publication: 31

Citation (WoS): 152

Citation (Scopus): 185

H-Index (WoS): 8

H-Index (Scopus): 8

Scholarships

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) PhD Scholarship, Official Institutions of Foreign Countries, 2011 - 2014

Awards

Tulum I., Best paper award "Peptidoglycan layer and disruption processes in *Bacillus subtilis* cells visualized using quick-freeze, deep-etch electron microscopy", Japanese Society Of Microscopy, June 2021

Tulum I., Cover Page and Editor's choice "Peptidoglycan layer and disruption processes in *Bacillus subtilis* cells visualized using quick-freeze, deep-etch electron microscopy", Japanese Society Of Microscopy, January 2020

Tulum I., Encouragement Award for Female Researchers - Okamura Award, Osaka City University, October 2017

Tulum I., Best presentation award "Subcellular localization of internal structure of gliding machinery in *Mycoplasma mobile*", Japanese Society For Mycoplasma, May 2017