

Asst. Prof. Tuğrul Doruk

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: A-5699-2015

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Education Information

Doctorate, Gebze Technical University, Fen Bilimleri Enstitüsü, Moleküler Biyoloji Ve Genetik (Dr), Turkey 2005 - 2013

Postgraduate, Gebze Yüksek Teknoloji Enstitüsü, Mühendislik Ve Fen Bilimleri Enstitüsü, Biyoloji (YI) (Tezli), Turkey 2002 - 2005

Undergraduate, Mersin University, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Turkey 1997 - 2001

Dissertations

Doctorate, Bacillus thuringiensis subsp. Israelensis'xxin biyoinsektisid (endotoksin) üretme kapasitesinin artırılması amacıyla fosfat metabolizmasının değiştirilmesi, Gebze Technical University, Fen Bilimleri Enstitüsü, Moleküler Biyoloji Ve Genetik (Dr), 2013

Postgraduate, Sivrisinek mücadelesinde sivrisinek larvalarına karşı kullanılacak mikroorganizmaların izolasyonu ve etkinliklerinin incelenmesi, Gebze Yüksek Teknoloji Enstitüsü, Mühendislik Ve Fen Bilimleri Enstitüsü, Biyoloji (YI) (Tezli), 2005

Research Areas

Life Sciences, Bioinformatics, Biotechnology, Microbiology, Molecular Biology and Genetics, Natural Sciences

Academic Titles / Tasks

Researcher, Umea Universitet (Umea University), 2022 - Continues

Assistant Professor, Ondokuz Mayıs University, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, 2018 - Continues

Research Assistant, Gebze Technical University, Fen Bilimleri Enstitüsü, 2002 - 2018

Academic and Administrative Experience

Ondokuz Mayıs University, 2020 - Continues

Courses

Biyotetik, Undergraduate, 2021 - 2022, 2020 - 2021, 2018 - 2019
Moleküler Etkileşim ve Sanal Tarama, Postgraduate, 2021 - 2022
Bitirme Projesi I, Undergraduate, 2021 - 2022, 2020 - 2021, 2018 - 2019
Prokaryotik Salgı Sistemleri, Postgraduate, 2021 - 2022, 2018 - 2019
Genetik Mühendisliği, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Moleküler Mikrobiyoloji, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Mesleki İngilizce I, Undergraduate, 2021 - 2022, 2020 - 2021
Moleküler Biyoloji Laboratuvarı, Undergraduate, 2021 - 2022, 2020 - 2021
Mikroorganizmalara Gen Transfer Yöntemleri, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Bitirme Projesi II, Undergraduate, 2021 - 2022, 2020 - 2021, 2018 - 2019
Moleküler Biyoloji, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Mesleki İngilizce II, Undergraduate, 2021 - 2022, 2020 - 2021
DNA HASARLARI VE ONARIMI, Undergraduate, 2019 - 2020, 2018 - 2019
MOLEKÜLER BİYOLOJİ LAB., Undergraduate, 2019 - 2020, 2018 - 2019
Gen Klonlamanın Temel Prensipleri, Postgraduate, 2018 - 2019
Klinik Mikrobiyoloji, Undergraduate, 2018 - 2019
Sitogenetik, Undergraduate, 2018 - 2019

Advising Theses

Tuğrul D., Effect of lon protease overexpression on endotoxin production and stress resistance in *Bacillus thuringiensis*, Doctorate, M.ABDI(Student), 2021
Tuğrul D., Lon proteaz geninin çoklu kopyalarının *Streptomyces coelicolor* A3(2)'de homolog ifadesi ve *Escherichia coli* 'de heterolog ifadesi üzerine çalışmalar, Postgraduate, H.YILMAZ(Student), 2019

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Synthesis, XRD, spectroscopic (UV-Vis, IR, EPR) and biological evaluations of cobalt(II)-ciprofloxacin complex as antimicrobial agent: In silico molecular docking and ADME**
Aycan T., Öztürk F., Doruk T.
JOURNAL OF MOLECULAR STRUCTURE, vol.1306, 2024 (SCI-Expanded)
- II. **A thermostable and acidophilic mannanase from *Bacillus mojavensis*: its sustainable production using spent coffee grounds, characterization, and application in grape juice processing**
Cilmeli S., Doruk T., Könen-Adıgüzel S., Adıgüzel A. O.
Biomass Conversion and Biorefinery, vol.14, no.3, pp.3811-3825, 2024 (SCI-Expanded)
- III. **Partial characterization of ss-glucosidase, ss-xylosidase, and a-larabinofuranosidase from *Jiangella alba* DSM 45237 and their potential in lignocellulose-based biorefining**
Aytas Z. G., Tunçer M., Kul C. S., Cilmeli S., Aydın N., Doruk T., Adıgüzel A. O.
SUSTAINABLE CHEMISTRY AND PHARMACY, vol.31, 2023 (SCI-Expanded)
- IV. **Effect of Lon Protease Overexpression on Endotoxin Production and Stress Resistance in *Bacillus thuringiensis***
Barkad M. A., Bayraktar A., Doruk T., Tunca S.
CURRENT MICROBIOLOGY, vol.78, no.9, pp.3483-3493, 2021 (SCI-Expanded)
- V. **Polyhydroxyalkanoate accumulation in *Streptomyces coelicolor* affected by SC07613 gene region**
Demir Oksuz Z., Doruk T., Yağcı N., Tunca Gedik S.
TURKISH JOURNAL OF BIOLOGY, vol.45, no.3, pp.275-286, 2021 (SCI-Expanded)
- VI. **Synthesis, structural, spectral and antimicrobial activity studies of copper-nalidixic acid complex with 1,10-phenanthroline: DFT and molecular docking**
AYCAN T., Öztürk F., Doruk T., DEMİR S., FİDAN M., Padaoglu H.

SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol.241, 2020 (SCI-Expanded)

- VII. **Development, Optimization, and Validation of a High Throughput Screening Assay for Identification of Tat and Type II Secretion Inhibitors of *Pseudomonas aeruginosa***
Massai F., Saleeb M., Doruk T., Elofsson M., Forsberg A.
FRONTIERS IN CELLULAR AND INFECTION MICROBIOLOGY, vol.9, 2019 (SCI-Expanded)
- VIII. **Synthesis and characterization of antimicrobial polylactide via ring-opening polymerization and click chemistry methods**
Aynali F., DOĞANCI E., Doruk T., SADIKOĞLU H.
POLYMER INTERNATIONAL, vol.68, no.3, pp.385-393, 2019 (SCI-Expanded)
- IX. **Supercritical water oxidation of octol - containing wastewater**
Gurbulak E., Yuksel E., Tekbas M., Doruk T., Eyvaz M., Bektas N.
GLOBAL NEST JOURNAL, vol.21, no.2, pp.172-179, 2019 (SCI-Expanded)
- X. **Comparative proteomic analysis of bacillus thuringiensis wild-type and two mutant strains disturbed in polyphosphate homeostasis**
Yeşilirmak F., Doruk T., Yilmaz Ş., Tunca Gedik S.
Turkish Journal of Biology, vol.42, no.1, pp.87-102, 2018 (SCI-Expanded)
- XI. **The Tat substrate SufI is critical for the ability of *Yersinia pseudotuberculosis* to cause systemic infection**
Avican U., Doruk T., östberg Y., Fahlgren A., Forsberg Å.
Infection and Immunity, vol.85, no.4, 2017 (SCI-Expanded)
- XII. **Naked-eye fluorescent sensor for Cu(II) based on indole conjugate BODIPY dye**
Tümay S. O., Okutan E., Sengul I. F., Özcan E., Kandemir H., Doruk T., Çetin M., Çoşut B.
Polyhedron, vol.117, pp.161-171, 2016 (SCI-Expanded)
- XIII. **High levels of polyphosphate kinase affect not only endotoxin production but also acid tolerance of bacillus thuringiensis**
Doruk T., Girgin Ersoy Z., Öncel M. S., Tunca Gedik S.
Turkish Journal of Biology, vol.40, no.6, pp.1168-1177, 2016 (SCI-Expanded)
- XIV. **Overexpression of polyphosphate kinase gene (ppk) increases bioinsecticide production by *Bacillus thuringiensis***
Doruk T., Avican U., Camci I. Y., Gedik S. T.
Microbiological Research, vol.168, no.4, pp.199-203, 2013 (SCI-Expanded)
- XV. **An efficient gene deletion system for *Bacillus thuringiensis***
Doruk T., Gedik S. T.
Biologia (Poland), vol.68, no.3, pp.358-364, 2013 (SCI-Expanded)
- XVI. **Deletion of polyphosphate kinase gene (ppk) has a stimulatory effect on actinorhodin production by *streptomyces coelicolor* A3(2)**
Yalim Camci I., Doruk T., Avican Ü., Tunca Gedik S.
Turkish Journal of Biology, vol.36, no.4, pp.373-380, 2012 (SCI-Expanded)
- XVII. **Further investigation of the mechanism of *Vitreoscilla hemoglobin* (VHb) protection from oxidative stress in *Escherichia coli***
Akbas M. Y., Doruk T., Ozdemir S., Stark B. C.
Biologia, vol.66, no.5, pp.735-740, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Efficacy of Diptera-targeted *Bacillus thuringiensis* var. israelensis against the pine processionary moth, *Thaumetopoea wilkinsoni* (Lepidoptera: Notodontidae)**
Yanar O., Topkara E. F., Doruk T.
ARCHIVES OF PHYTOPATHOLOGY AND PLANT PROTECTION, vol.55, no.13, pp.1530-1541, 2022 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **New Small Molecule Inhibits Pyoverdine Biosynthesis in *Pseudomonas aeruginosa***
Uyanık E., KUL Ç. S., ÇAĞLAR N., DORUK T.
FEMS Conference on Microbiology 2022, Belgrade, Serbia, 30 June - 02 July 2022, pp.340-341
- II. **Heterolog Expression, Purification and Characterization of *Bacillus Mojavensis* Th309 Sourced Pectate Lyase Enzyme in *E. coli***
Aydın N., DORUK T.
9th International Istanbul Scientific Research Congress, İstanbul, Turkey, 14 - 15 May 2022, pp.147
- III. **The Effects of PVDM Protein Deprivation on Virulence in *Pseudomonas aeruginosa***
Kul Ç. S., DORUK T.
9th International Istanbul Scientific Research Congress, İstanbul, Turkey, 14 - 15 May 2022, pp.168
- IV. **Screening of Potential Cutinase-Producing Clones in Metagenomic Libraries Constructed Using DNA Extracted from Microplastics**
ŞEN F., CİLMELİ S., TUNÇER M., DORUK T., KÖNEN ADIGÜZEL S., KIDEYŞ A. E., KARAHAN A., ADIGÜZEL A. O.
2nd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 10 - 13 March 2022
- V. **Co-Production of Pectinase, Cellulase and Xylanase by Thermophilic *Aspergillus* sp. 55SZ for Clarification of Fruit Juices.**
ÇELİK T., YAĞIZ N., DORUK T., TUNÇER M., ADIGÜZEL A. O.
6th International Conference on Sustainable Agriculture and Environment, Konya, Turkey, 3 - 05 October 2019, pp.488-491
- VI. **Antimikrobiyal Polilaktik Asit Filmlerin Hazırlanması ve Termal/Mekanik Özelliklerinin İncelenmesi**
AYNALI F., DOĞANCI E., DORUK T., ÖZKOÇ G., SADIKOĞLU H.
31. Ulusal Kimya Kongresi, İstanbul, Turkey, 10 - 13 September 2019, pp.102
- VII. **Novel Actinobacteria Strains with Antimicrobial and Antibiofilm Activities Isolated from Various Environmental Samples**
ATEŞ H., AY H., DORUK T., ŞAHİN N.
2. Uluslararası UNIDOKAP Karadeniz Sempozyumu, Samsun, Turkey, 28 - 30 November 2018
- VIII. **Polyphasic Taxonomy of A Novel Actinomadura sp. 14C53, Isolated from Basaltic Parent Material**
ATEŞ H., AY H., DORUK T., ŞAHİN N.
2nd International UNIDOKAP Black Sea Symposium on BIODIVERSITY, 28 - 30 November 2018, pp.154
- IX. **Comparison of Antibiotic Production Profile of *Streptomyces coelicolor* M145 Appk and *Streptomyces coelicolor* A3(2) Appk**
DEMİR G., BAYRAKTAR A., DEMİR ÖKSÜZ Z., DORUK T., TUNCA GEDİK S.
International Eurasian Conference on Biological and Chemical Sciences, Ankara, Turkey, 26 - 27 April 2018
- X. **Heterologous expression of *Streptomyces coelicolor* "relA" and "lon" genes in different *Escherichia coli* mutants**
YILMAZ H., CESUR M. F., DEMİR ÖKSÜZ Z., DORUK T., TUNCA GEDİK S.
18th International Symposium on the Biology of Actinomycetes, Jeju, South Korea, 23 - 27 May 2017
- XI. **Polifosfat sentezi ve yıkımından sorumlu enzimlerden yoksun *Bacillus thuringiensis* suşunda endotoksin biyosentezi**
YEDEKÇİ A., DORUK T., TUNCA GEDİK S.
Ulusal Biyoteknoloji Kongresi, Turkey, 18 - 19 December 2015
- XII. ***Bacillus thuringiensis* te polifosfat metabolizması ve ikincil metabolit üretimi arasındaki ilişki**
DORUK T., YILMAZ Ş., DEDE YEŞİLIRMAK F., TUNCA GEDİK S.
Ulusal Biyoteknoloji Kongresi, Turkey, 18 - 19 December 2015
- XIII. **Yüksek miktardaki polifosfat sadece endotoksin biyosentezini değil *Bacillus thuringiensis* in asit direncini de arttırıyor**
DORUK T., GİRGİN ERSOY Z., TUNCA GEDİK S.
Ulusal Biyoteknoloji Kongresi, Turkey, 18 - 19 December 2015
- XIV. ***Lactococcus lactis* in Nisin Üretimini Optimizasyonu**

GİRGİN ERSOY Z., DORUK T., TUNCA GEDİK S.

Ulusal Biyoteknoloji Kongresi, Turkey, 18 - 19 December 2015

XV. **Role of twin arginine translocation tat substrates in virulence of Yersinia**

AVİCAN U., DORUK T., FAHLGREN A., FORSBERG A.

Microbial Pathogenesis and Host Response CSHL, Cold Spring Harbor, New York, United States Of America, 8 - 12 September 2015

Supported Projects

Doruk T., Project Supported by Higher Education Institutions, *Geobacillus kaustophilus* (HTA426) ait hücre içi proteaz (GK2549) klonlanması ve ifade ettirilmesi üzerine çalışmalar, 2021 - 2022